This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.667 MGD wastewater treatment plant and a future design flow tier of 0.94 MGD. This permit action consists of updating the proposed effluent limits to reflect the current Virginia Water Quality Standards (WQS) (effective January 6, 2011), updating permit language as appropriate, and including an additional design flow tier of 0.94 MGD. The effluent limitations and special conditions contained in this permit will maintain the WQS of 9VAC25-260-00 et seq.

1.	Facility Name and Mailing Address:	Gordonsville WWTP P. O. Box 148 Ruckersville, VA 22968	SIC Code :	4952 WWTP
	Facility Location:	735 Hill Road Gordonsville, VA 22942	County:	Orange
	Facility Contact Name:	Timothy L. Clemons Assistant General Manager	Telephone Number: Email Address:	434-985-7811 Tclemons@rapidan.org
2.	Permit No.:	VA0021105	Expiration Date of previous permit:	March 28, 2012
	Other VPDES Permits associated with this facility:		VAN030046	
	Other Permits associated with this facility:		N/A	
	E2/E3/E4 Status:	N/A		
3.	Owner Name:	Rapidan Service Authority		
	Owner Contact/Title:	Dudley M. Pattie General Manager	Telephone Number: Email Address:	434-985-7811 Dpattie@rapidan.org
4.	Application Complete Date:	September 26, 2011		
	Permit Drafted By:	Joan C. Crowther	Date Drafted:	August 21, 2012
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	August 27, 2012
	WPM Review By:	Bryant Thomas	Date Reviewed:	September 10, 2012
	Public Comment Period :	Start Date: February 14, 2013	End Date:	March 13, 2013

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination dated May 8, 1996.

Receiving Stream Name :	South Anna River, UT		
Drainage Area at Outfall:	0.9 sq.mi.	River Mile:	0.23
		Stream Code:	8-XAF
Stream Basin:	York River	Subbasin:	None
Section:	3	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-F01R
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
1Q10 Low Flow:	0.0MGD	1Q10 High Flow:	0.0 MGD
30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.0 MGD
Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD
303(d) Listed (Receiving Stream):	No	303(d) (Downstream):	Yes *(E.coli)* Yes (Aquatic)
TMDL (Receiving Stream):	Not Applicable	TMDL (Downstream):	Yes (*E.coli*) No (Aquatic)
Date TMDL Approved (Receiving Stream):	Not Applicable	Date TMDL Approved (Downstream):	8/2/06 (*E.coli*) Schedule by 2022 (Aquatic)

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

- ✓ State Water Control Law
- ✓ Clean Water Act
- ✓ VPDES Permit Regulation
- ✓ EPA NPDES Regulation
- ___ EPA Guidelines
- ✓ Water Quality Standards
- ✓ Other - (General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation For Total Nitrogen And Total Phosphorus Discharges And Nutrient Trading In The Chesapeake Bay Watershed In Virginia)

7. Licensed Operator Requirements: Class II

8. Reliability Class: Class II

9. Permit Characterization:

- ___ Private
- ___ Federal
- ___ State
- ✓ POTW
- ✓ TMDL
- ___ Effluent Limited
- ✓ Water Quality Limited
- ✓ Toxics Monitoring Program Required
- ✓ Pretreatment Program Required
- ___ Possible Interstate Effect
- ___ Compliance Schedule Required
- ___ Interim Limits in Permit
- ___ Interim Limits in Other Document

10. **Wastewater Sources and Treatment Description:**

The wastewater treatment consists of a bar screen followed by influent flow monitoring where the flow can be directed to either the aerated lagoon or the equalization/emergency storage basin. Wastewater directed to the aerated lagoon enters the clarifier to the pump station. Chlorine is injected into the pipe immediately downstream of the clarifiers and upstream of the Pond Pump Station. If the flow is directed to the equalization/emergency storage basin, it bypasses the clarifier and goes directly to the Pond Pump Station. The Pond Pump Station directs the wastewater to one of three locations: 1) Overland Pump Station wet well; 2) One Day Pond; or 3) Storage Pond. The Overland Pump Station directs the flow to the overland flow system where it then collected, flows through an effluent flow meter to the outfall. All lagoons/ponds in the treatment system are unlined.

Chlorine contact time is accomplished through the baffled Pond Pump Station wet well and the pipeline going up to either the Overland Pump Station wet well or the One Day Pond. Normal operation will have the flow going to the Overland Pump Station wet well and the chlorine residual will be monitored at that location prior to being pumped onto the spray fields.

In the event that additional chlorine contact time is necessary, flow can be pumped into the One Day Pond, which would used as a chlorine contact basin and the residual will be monitored in the Overland Pump Station wet well prior to being pumped onto the spray fields. Flow may be directed to and stored as needed in the existing Storage Pond either by pumping from the Pond Pump Station through the Overland Pump Station wet well, by pumping from the Pond Pump Station around the Overland Pump Station wet well and into the Storage Pond, or by gravity between the One Day Pond and the Storage Pond via interconnected piping. Stored water can be returned directly to the Overland Pump Station wet well or by portable transfer pump to the One Day Pond.

A future liquid chlorine system will be used on an as-needed basis to supplement the existing gas chlorine system. The future system will be located, if required, in the Overland Pump Station building and chlorine will added either into the Overland Pump Station wet well or into the piping going to the One Day Pond.

A Certificate to Operate (CTO) the "RSA Gordonsville WWTP Disinfection Improvements Project" was issued on December 6, 2011. The CTO documentation can be found in Attachment 2.

See Attachment 3 for a facility schematic/diagram.

TABLE 1 – Outfall Description				
Outfall Number	**Discharge Sources**	**Treatment**	**Design Flows**	**Outfall Latitude and Longitude**
001	Domestic and/or Commercial	See Item 10 above.	0.667 MGD and 0.94 MGD	38° 07' 35" N 78° 12' 00" W

11. Sludge Treatment and Disposal Methods:

The digester and drying beds at the plant have not been used for at least 13 years. The only sludge that is generated from the treatment process is what settles in the clarifiers, which is very little. The sludge is returned to the aerated and EQ/emergency storage pond. Sludge in the aerated lagoon and the EQ/emergency storage pond seems to decompose causing no problems at the plant.

RSA is currently investigating renting a portable press or centrifuge to use on these ponds.

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12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

172 B - Gordonsville and 172 C - Boswells Tavern

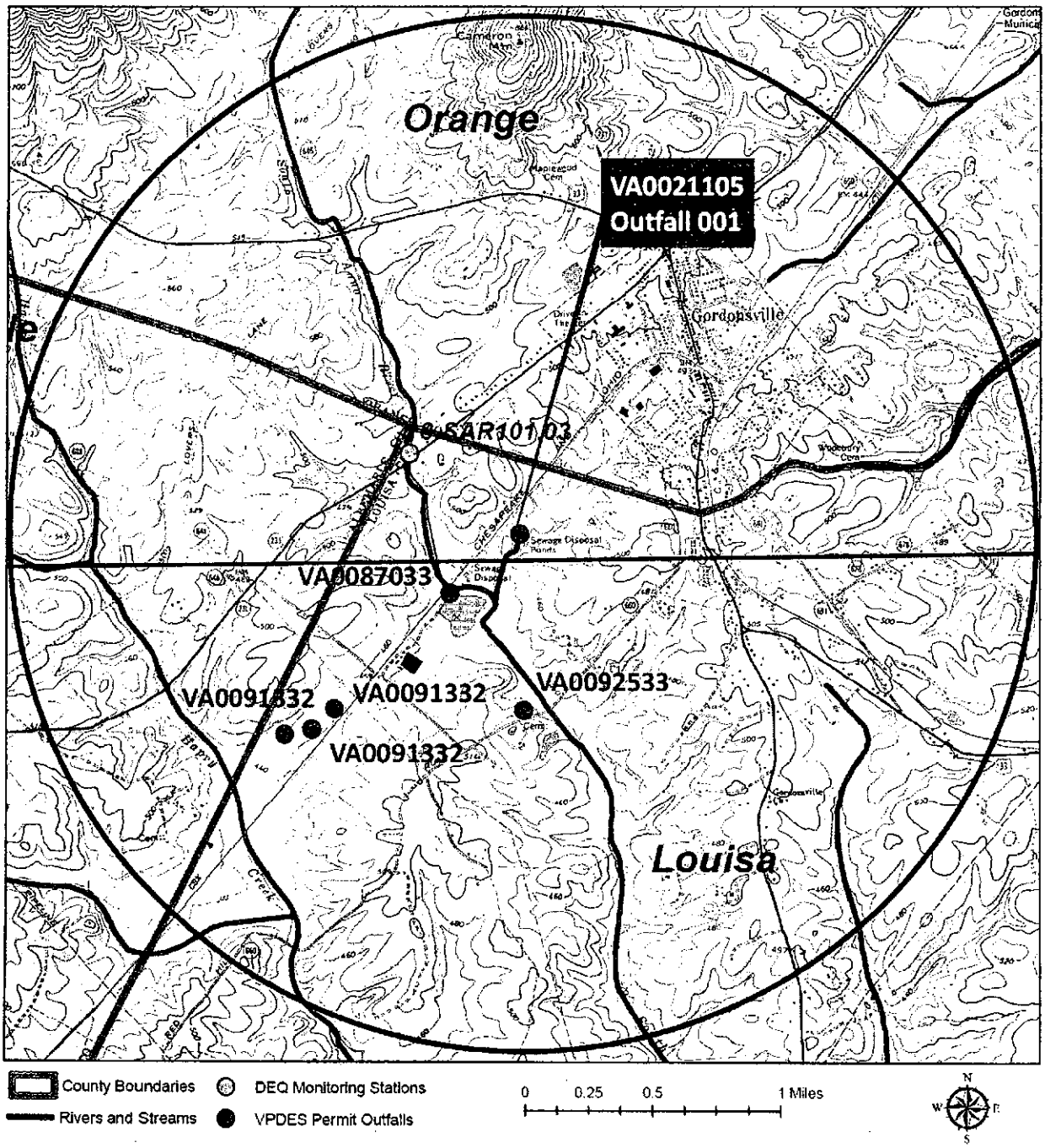

TABLE 2 (Discharges located within 2 mile radius of Gordonsville WWTP)	
VPDES Permit No.	Facility Name
VA0091332	Old Dominion Electric Cooperative - Louisa
VA0087033	Dominion – Gordonsville Power Station
VA0092533	Klocker Pentaplast of America

TABLE 3 (DEQ Ambient Water Quality Monitoring Station within 2 mile radius of Gordonsville WWTP)	
DEQ AWQM Station No.	Description
8-SAR101.03	Located on the South Anna River at Route 231 Bridge

13. Material Storage:

TABLE 4 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
150 # cylinders of Chlorine Gas	4 cylinders	Stored in Chlorine Building
Chlorine tablets	1 bucket	Stored in Chlorine Building
De-chlor Tablets	1 bucket	Stored in Chlorine Building
Sodium Hypochlorite	1 fifteen gallon tote	Stored in Chlorine Building

14. Site Inspection:

Performed by April Young, DEQ water compliance staff on January 5, 2012. (See Attachment 4).

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

The receiving stream, an unnamed tributary to the South Anna River (XAF), flows into the South Anna River. The nearest downstream DEQ monitoring station with ambient data is located on the South Anna River at Station 8-SAR097.82. Station 8-SAR097.82 is located approximately 2.68 rivermiles downstream from Outfall 001, at the Route 603 bridge crossing. This ambient water quality and biological monitoring station is located within Section 3c of the York River Basin. A monitoring summary for this station, as taken from the draft 2012 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report, is found below:

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A fecal coliform TMDL for the South Anna River watershed has been completed and approved. Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. An observed effect is noted for the aquatic life use based on the above information. The fish consumption use is considered fully supporting with an observed effect based on PCBs in fish tissue. The wildlife use is considered fully supporting.

The full planning statement dated April 16, 2012 is found in Attachment 5.

Significant portions of the Chesapeake Bay (Bay) and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to

achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Fact Sheet Section 17.e provides additional information on specific nutrient limitations for this facility to implement the provisions of the Chesapeake Bay TMDL.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260 (360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, South Anna, UT, is located within Section 3 of the York River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

The Freshwater Water Quality Criteria/Wasteload Allocation Analysis dated July 25, 2012 (Attachment 6) details water quality criteria applicable to the receiving stream.

Ammonia:
The 7Q10 and 1Q10 of the receiving stream are 0.0 MGD. In cases such as this, effluent pH and temperature data may be used to establish the ammonia water quality standard. Staff has re-evaluated the effluent data for pH and temperature for the period of June 2009 through April 2012 and finds no significant differences from the data used to establish ammonia criteria. (See Attachment 7 for the pH and temperature data.)

However because the previous pH and temperature data used was only the minimum and maximum values that had been reported on the Discharge Monitoring Reports and the timeframe was not specified, staff decided to use the daily June 2009 through April 2012 pH and temperature values to establish the ammonia criteria for this permit reissuance, thereby providing the necessary documentation for the establishment of the ammonia effluent limitations for this discharge point. The following table provides the pH (90^{th} percentile), temperature (90^{th} percentile), acute criteria, chronic criteria values and the current monthly average and weekly maximum effluent limitations and the proposed ammonia effluent limitations.

	Current (May – October)	Current (Nov-April)	Year Round Proposed limits
pH (SU) (90^{th} Percentile)	8.1	7.4	7.7
Temperature (°C) (90^{th} Percentile)	23	13	22.6
Acute Criteria (mg/L)	4.51	14.06	14.4
Chronic Criteria (mg/L)	1.03	2.14	2.13
Monthly Average (mg/L)	1.1	2.4	2.3
Weekly Maximum (mg/L)	1.5	3.3	3.1

Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). The 7Q10 of the receiving stream is zero and no ambient data is available, the effluent data for hardness can be used to determine the metals criteria. Total hardness data reported on the Discharge Monitoring Reports from January 1996 through July 2001 (See Attachment 8 for the Hardness data.) was used to determine the average Total Hardness value of 105 mg/L and hardness-dependent metals criteria in Attachment 6.

Bacteria Criteria:
The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli bacteria per 100 ml of water shall not exceed a monthly geometric mean of 126 n/100 mls for a minimum of four weekly samples taken during any calendar month.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, South Anna, UT, is located within Section 3 of the York River Basin. There are no special standards for Section 3.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on July 24, 2012, for records to determine if there are threatened or endangered species in the vicinity of the discharge. No threatened or endangered species were identified. (See Attachment 9 for the results of the database search.)

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The Town of Gordonsville Wastewater Treatment Plant's outfall is into a stream with a 7Q10 flow of 0.0 MGD and at times the stream flow is comprised of only effluent. It is staff's best professional judgment that such streams are Tier I since the limits are set to meet the WQS. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:
Effluent data obtained from permit application and DMRs have been reviewed and determined to be suitable for evaluation. Effluent data from January 2007 through June 2012 were reviewed, and the following permit effluent parameters were reported as violations:

Ammonia as N – February 2007, January 2010, and December 2010
Dissolved Oxygen – July 2011
E. coli – June 2007, July 2011, and May 2012
pH – August 2008

BOD_5 – June 2012
TSS – June 2012
TRC – June 2012.

The following pollutants require a wasteload allocation analysis: Total Residual Chlorine, Ammonia as N, and Total Recoverable Copper.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C_s = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N and TKN:

For the design flow of 0.667 MGD:

Staff evaluated the new effluent data (January 2009 – April 2012) and has concluded that since the old pH and temperature data was not well documented even though it was not significantly different from the new effluent data, the new pH and temperature data would be used to determine the ammonia effluent limitations. Also, the seasonal ammonia effluent limitations would be replaced with a year round ammonia limitation. Although the proposed year round ammonia effluent limitation are less stringent than the current limits for the months of May through October, it is staff's best professional judgment that the proposed year around ammonia effluent limitation maintain water quality standards and will not cause any water quality issues. The proposed year round ammonia effluent limitations were established to maintain water quality standards as documented in Attachment 10.

	Current (May – October)	Current (Nov-April)	Year Round Proposed limits
Monthly Average (mg/L	1.1	2.4	2.3
Weekly Maximum (mg/L)	1.5	3.3	3.1

For the design flow of 0.94 MGD:

The facility will be given a year round TKN limit of 3.0 mg/L based on the June 24, 1996 stream model. A TKN limit of 3.0 mg/L assumes that the remaining nitrogen is in the form of refractory organic compounds that will not be easily oxidized and that ammonia is removed when the 3.0 mg/L TKN limit is met. The weekly average limit will be 4.5 mg/L based on a multiplier of 1.5 times the monthly average.

2) Total Residual Chlorine:

Chlorine is used for disinfection and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows and the mixing allowance. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.008 mg/L and a weekly average limit of 0.010 mg/L are proposed for this discharge (see Attachment 11).

3) Metals/Organics:

The current permit was issued with a Total Recoverable Copper effluent limitation of 17µg/L. This effluent limitation was due to an industrial discharge into the sanitary collection system. This industry, Liberty Fabrics, was closed in 2003. The wastewater treatment plant has continued to have effluent limitations for Total Recoverable Copper since this time.

During this permit reissuance, the need for Total Recoverable Copper effluent limitation was re-evaluated using the effluent copper data collected from January 2007 to April 2012. Based on this analysis and that the source of the copper has been eliminated, no effluent limitations are necessary to protect the receiving stream's water quality standards. See Attachment 12 for the documentation to support this conclusion.

d) Effluent Limitations and Monitoring, Outfall 001 -- Conventional and Non-Conventional Pollutants

For the 0.667 MGD design flow: No changes to dissolved oxygen (D.O.), biochemical oxygen demand 5-day (BOD_5), total suspended solids (TSS), and pH limitations are proposed. Changes are proposed for Ammonia as N.

For the 0.94 MGD design flow: No changes to the dissolved oxygen (D.O.), total suspended solids (TSS), and pH limitations are proposed. Changes are proposed for biochemical oxygen demand 5-day, total nitrogen, and total phosphorus.

Based on the historical permit file, a stream model was conducted to determine the effluent limitations for the 0.667 MGD facility in December 1985. The stream model results indicate that water quality standards were at an acceptable risk when the Dissolved Oxygen was 6.5 mg/L, the BOD_5 was 3 mg/L, and the TKN/Ammonia as N was 1 mg/L. However, in a Memorandum dated December 3, 1985, an agreement was reached and the State Water Control Board's Central Office concurred that due to the limited confidence in the December 1985 model, the effluent limitations would be relaxed and stream monitoring would be included in the permit to ensure that water quality standards were being maintained. The BOD_5 and Dissolved Oxygen limitations were established at 10 mg/L and 6.5 mg/L, respectively.

The permit file contained a June 24, 1996 stream model that established effluent limitations for the 0.94 MGD facility. The $cBOD_5$, TKN, and DO were 10 mg/L, 3 mg/L and 6.5 mg/L, respectively. This stream model ensured that the DO water quality criterion was maintained if these effluent limitations were met.

The current permit did not establish TKN effluent limitations only effluent monitoring for the 0.94 MGD. In its place, seasonal ammonia effluent limitations based on toxicity criteria were established. For this permit reissuance, the ammonia seasonal effluent limitations and monitoring have been removed and replaced with the stream model based TKN effluent limitation of 3.0 mg/L. A TKN limit of 3.0 mg/L assumes that the remaining nitrogen is in the form of refractory organic compounds that will not be easily oxidized and that ammonia is removed when the 3.0 mg/L TKN limit is met.

It is staff's practice to equate the Total Suspended Solids limits with the $BOD_5/cBOD_5$ limits. TSS limits are established to equal $BOD_5/cBOD_5$ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. Only concentration limits are now found in the individual VPDES permit when the facility installs nutrient removal technology. The basis for the concentration limits is 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* which requires new or expanding discharges with design flows of ≥0.04 MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

This facility has also obtained coverage under 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.* This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN030046. Total Nitrogen Annual Loads and Total Phosphorus Annual Loads from this facility are found in 9VAC25-720 – *Water Quality Management Plan Regulation* which sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of ≥0.5 MGD above the fall line and ≥0.1 MGD below the fall line.

Monitoring for Nitrates + Nitrites, Total Kjeldahl Nitrogen, Total Nitrogen, and Total Phosphorus are included in this permit for the design flow tier of 0.94 MGD. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9VAC25-820. Annual average effluent limitations, as well as monthly and year to date calculations, for Total Nitrogen and Total Phosphorus are included in this individual permit. The annual averages are based on 9VAC25-40 and GM07-2008.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table (Item 19). Limits established for the 0.667 MGD design flow were Flow, BOD_5, Total Suspended Solids, Ammonia as N, pH, Dissolved Oxygen, Total Residual Chlorine, and *E.coli* bacteria. Limits established for the 0.94 MGD design flow were Flow, $cBOD_5$,

Total Suspended Solids, TKN, pH, Dissolved Oxygen, Total Residual Chlorine, *E.coli* bacteria, Total Nitrogen (calendar year), and Total Phosphorus (calendar year).

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD/CBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

The backsliding proposed with this reissuance conforms to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, 9VAC25-31-220.L., and 40 § CFR 122.44.

The Total Recoverable Copper limits were removed for both design flows. New information was received stating the industry which was the basis for including the Total Recoverable Copper effluent limitation had closed in 2003 and an evaluation of the past five years of data indicated that no limit was now necessary. The revisions to the limits are allowed since the revisions comply with the water quality standards 402(o)(3) and they are consistent with antidegradation 303(d)(4)(B).

The seasonal Ammonia as N effluent limitations for the 0.667 MGD design flow was replaced with year round Ammonia as N effluent limitations. This year around ammonia effluent limitation was established by using the pH and temperature daily effluent limitations for the period of June 2009 through April 2012. This data was new and the pH and temperature effluent results are now documented. The previous seasonal ammonia effluent limitations had been carried forward from the previous permit. The previous pH and temperature data used was only the minimum and maximum values that had been reported on the Discharge Monitoring Reports and the timeframe was not specified. It is staff's best professional judgment that the year around ammonia effluent limitation is now clearly documented and will maintain water quality standards.

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19. A. Effluent Limitations/Monitoring Requirements:

Design flow is 0.667 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the issuance of the Certificate to Operate (CTO) for the 0.94 MGD facility or the expiration date of the permit, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	3,5	10 mg/L 25 kg/day	15 mg/L 38 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS)	2	10 mg/L 25 kg/day	15 mg/L 38 kg/day	NA	NA	3D/W	8H-C
DO	3,5	NA	NA	6.5 mg/L	NA	1/D	Grab
Ammonia, as N (mg/L)	3	2.3	3.1	NA	NA	3D/W	8H-C
E. coli (Geometric Mean)	3	126 n/100mls	NA	NA	NA	1/W	Grab
Total Residual Chlorine (after contact tank)	2, 3, 4	NA	NA	1.0 mg/L	NA	3/D at 4-hr Intervals	Grab
Total Residual Chlorine (after dechlorination)	3	0.008 mg/L	0.010 mg/L	NA	NA	3/D at 4-hr Intervals	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 13.

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.
3/D = Three times per day.
1/W = Once every week.
3D/W = Three days a week.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of 8 (eight) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum 8 (eight) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

19. B. Effluent Limitations/Monitoring Requirements:

Design flow is 0.94 MGD.

Effective Dates: During the period beginning with the issuance of the Certificate to Operate (CTO) for the 0.94 MGD and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
$cBOD_5$	3,5	10 mg/L 36 kg/day	15 mg/L 53 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS)	2	10 mg/L 36 kg/day	15 mg/L 53 kg/day	NA	NA	3D/W	8H-C
DO	3,5	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (TKN)	3,5	3.0 mg/L 10 kg/day	4.5 mg/L 16 kg/day	NA	NA	3D/W	8H-C
E. coli (Geometric Mean)	3	126 n/100mls	NA	NA	NA	1/W	Grab
Total Residual Chlorine (after contact tank)	2, 3, 4	NA	NA	1.0 mg/L	NA	3/D at 4-hr Intervals	Grab
Total Residual Chlorine (after dechlorination)	3	0.008 mg/L	0.010 mg/L	NA	NA	3/D at 4-hr Intervals	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/2W	8H-C
Total Nitrogen [a]	3, 6	NL mg/L	NA	NA	NA	1/2W	Calculated
Total Nitrogen – Year to Date [b]	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year [b]	3, 6	6.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/2W	8H-C
Total Phosphorus – Year to Date [b]	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year [b]	3, 6	0.4 mg/L	NA	NA	NA	1/YR	Calculated

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 14.
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.
1/M = Once every month.
3/D = Three times per day.
1/W = Once every week.
3D/W = Three days a week.
1/2W = Once every two weeks at least 7 days apart.
1/YR = Once per year.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of 8 (eight) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum 8 (eight) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19. C. Groundwater Monitoring Requirements:

a. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is required to monitoring the groundwater monitoring wells as specified in the Ground Water Monitoring Plan dated November 2002. The frequency of monitoring for the following groundwater monitoring wells; MW1, MW2, MW3, MW4, MW5, MW6, MW7, MW8, MW9, MW10, MW12, and MW13shall be as follows:

PARAMETER	UNITS	LIMITATIONS	MONITORING REQUIREMENTS	
			Frequency	Sample Type
Ground Water Elevation	Feet	NL	1/Y	Instantaneous
pH	Standard Units	NL	1/Y	Grab
Specific Conductance	Umhos/cm	NL	1/Y	Grab
Nitrate Nitrogen	mg/L	NL	1/Y	Grab
Total Organic Carbon (TOC)	mg/L	NL	1/Y	Grab
Chlorides	mg/L	NL	1/Y	Grab
Total Coliform	n/100 mL	NL	1/Y	Grab
Total Sulfates	mg/L	NL	1/Y	Grab
Total Kjeldahl Nitrogen	mg/L	NL	1/Y	Grab
Ammonia Nitrogen	mg/L	NL	1/Y	Grab
Total Recoverable Zinc	mg/L	NL	1/Y	Grab

NL= No Limitation, Monitoring only required.
1/Y = Once per year.

b. Samples taken in compliance with the monitoring requirements specified above shall be taken in accordance with the facility's groundwater monitoring plan.

c. Permittee is required to indicate the appropriate test method and the Quantification Level (QL) on each annual report.

d. Minimum sample size for Conductivity is 500 mL, with maximum storage time of 28 days.

e. The reporting year shall be the calendar year (January through December) and the groundwater data shall be submitted by the tenth of the month following the month in which the results were received.

20. Other Permit Requirements:

a) Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.

These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-70 and by the Water Quality Standards at 9VAC25-260-170. A minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more that 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be <1.0 mg/L with any TRC <0.6 mg/L considered a system failure. Monitoring at numerous STPs has concluded that a TRC residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.* §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

b) Permit Section Part I.C., details the Pretreatment Program requirements.

The VPDES Permit Regulation at 9VAC25-31-210 requires monitoring and 9VAC25-31-220.D. requires all discharges to protect water quality. The VPDES Permit Regulation at 9VAC25-31-730. through 900., and 40 CFR Part 403 requires POTWs with a design flow of >5 MGD and receiving from Industrial Users (IUs) pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to pretreatment standards to develop a pretreatment program. Program requirements and reporting are found in this section of the permit.

The Town of Gordonsville has an active pretreatment program with no SIUs. Until such time any Significant Industrial User permit is issued by the facility, the pretreatment program requirements stated in the permit are deferred.

c) Permit Section Part I.D., details the Whole Effluent Toxicity Program requirements.

The VPDES Permit Regulation at 9VAC25-31-210 requires monitoring and 9VAC25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A TMP is imposed for municipal facilities with a design rate >1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program, or those determined by the Board based on effluent variability, compliance history, IWC, and receiving stream characteristics.

The Town of Gordonsville has an active pretreatment program with no SIUs. Since there are no Significant Industrial Users discharging into the collection system, the potential for effluent toxicity is greatly reduced. Therefore, the whole effluent toxicity monitoring requirement has been delayed until such time there is an issuance of any Significant Industrial User permit by the facility and notification by the DEQ.

d) Permit Section Part I. E., details the Groundwater Monitoring Program requirements.

This special condition requires the permittee to monitor the groundwater for the specific parameters listed in Item 19.C of the Fact Sheet. This is necessary to insure protection of the Groundwater Regulations; namely, 9VAC25-280-40, 9VAC25-280-50, and 9VAC25-280-70.

The permittee is required to submit an annual report and the interpretation of this data in regards to Groundwater standards and criteria that apply to this facility. The reporting year shall be the calendar year (January through December) and the report shall be submitted by March 31th of the following year. The special condition also requires a corrective action plan if necessary to ensure that the groundwater standards are complied with.

The permittee is required to submit a groundwater monitoring well maintenance plan with 90 days of the permit's effective date detailing the following: 1) a maintenance schedule for cleaning the monitoring wells during this permit term; 2) a description of how the monitoring wells will be cleaned; and 3) a description of how the monitoring wells will be inspected to ensure that they are still in good working order.

21. Other Special Conditions:

a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.

b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1. and B.2. for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in

accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class II operator.

f) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of II.

g) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

h) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2.; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

i) Nutrient Offsets. The Virginia General Assembly, in their 2005 session, enacted a new Article 4.02 (Chesapeake Bay Watershed Nutrient Credit Exchange Program) to the Code of Virginia to address nutrient loads to the Bay. Section 62.1-44.19:15 sets forth the requirements for new and expanded dischargers, which are captured by the requirements of the law, including the requirement that non-point load reductions acquired for the purpose of offsetting nutrient discharges be enforced through the individual VPDES permit.

j) E3/E4. 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

k) Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

l) Influent Flow Measurement. The influent flow shall be continuous recorded by totalizing, indicating and recording requirement. The daily flows shall be recorded and the influent monthly average shall be calculated on the monthly data sheet.

m) Overland Flow System. This special condition requires the wastewater application rates to the overland flow system to be recorded daily and reported monthly with the monthly Discharge Monitoring Report (DMR). It also prohibits the wastewater application during period of significant rainfall events. All rainfall events are to

be measured, recorded daily and reported monthly with the DMR.

n) Calculation of Mass Data. This special condition requires the mass calculations to be based upon the effluent flow at the time of sampling. If at the time of sampling, the effluent exceeds the treatment works design flow due to the rainfall events, then the mass data calculations shall be based on the wastewater volume applied to the overland flow fields for the previous 24-hour period prior to the rainfall event.

o) TMDL Reopener: This special condition is to allow the permit to reopen if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

a) Special Conditions:
1) The Influent Flow Monitoring special condition was added to this permit. Previously, the permit contained an Outfall 101 that required influent flow monitoring along with BOD_5, TRC, and TSS. Due to the new TRC monitoring location and the decision to remove the BOD_5 and TSS, Outfall 101 was removed from the permit. It is staff's best professional judgment that the influent flows continue to be measured, recorded and reported on a monthly basis thus the need to add this special condition to the permit.

b) Monitoring and Effluent Limitations:
1) Outfall 101 was removed from the permit. (see Item 22.a.1)
2) The Ammonia seasonal effluent limitations were removed and replaced with an ammonia year round effluent limitation for both design flows.
3) Temperature effluent limitations and monitoring requirement was removed from the permit for both design flows.
4) Total Recoverable Copper effluent limitations and monitoring requirements were removed from the permit for both design flow.
5) A TKN effluent limitation was proposed for the 0.94 MGD in accordance with the Stream Model dated June 24, 1996.
6) The Total Nitrogen and Total Phosphorus annual concentration effluent limitations for the 0.94 MGD were updated.
7) Groundwater monitoring was reduced from semi-annually to annually.
8) Groundwater monitoring for Total Recoverable Cadmium, Total Recoverable Chromium, Total Recoverable Copper, and Total Recoverable Lead were removed from the permit. Over the past 5 years of monitoring these metals had no exceedances observed; therefore, it was decided that they no longer needed to be monitored. Also, the potential source of these metals, Liberty Fabrics, was closed in 2003 therefore, no longer discharging the Gordonsville WWTP.

23. Variances/Alternate Limits or Conditions:

There are no variances/alternate limits or conditions for this permit.

24. Public Notice Information:

First Public Notice Date: February 14, 2013 Second Public Notice Date: February 21, 2013

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 15 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

25. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

This facility discharges directly to an unnamed tributary to the South Anna River. There are no impairments listed in the draft 2012 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report for this receiving stream; however, the South Anna River below the confluences with the unnamed tributary is listed with several impairments. The South Anna River is listed for non attainment of *E.coli* bacteria (Recreational Use) and benthic macroinvertebrate (Aquatic Life Use) in Part I of the draft 2012 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report. EPA approved the South Anna River bacteria TMDL on August 2, 2006 for this segment. It contains a *E.coli* WLA of 1.64E+12 cfu/year for this discharge. This permit has E.coli limit of 126 n/cmls that is in compliance with the TMDL. The benthic macroinvertebrate impairment is scheduled for completion by 2022.

Special Permit considerations:
None

TMDL Reopener: This special condition is to allow the permit to reopen if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

26. Additional Comments:
Previous Board Action(s): None

Staff Comments: None.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 16.

VA0021105 Gordonsville Wastewater Treatment Plant
Fact Sheet Attachments

Attachment	Description
1	Flow Frequency Determination Memo dated May 8, 1996
2	Certificate to Operate for Chlorination dated December 6, 2011
3	Facility Schematic/Diagram
4	Site Inspection by DEQ Compliance Staff on January 5, 2012
5	DEQ Planning Statement dated April 16, 2012
6	Freshwater Water Quality Criteria/Wasteload Allocated Analysis dated July 25, 2012
7	pH and Temperature Data: June 2009 – April 2012
8	Total Hardness Data: January 1996 – July 2001
9	DGIF Threatened and Endangered Species Database Search dated July 24, 2012
10	Statistical Analysis for Ammonia
11	Statistical Analysis for Total Residual Chlorine
12	Statistical Analysis for Total Recoverable Copper
13	Stream Model for 0.667 MGD Design Flow
14	Stream Model for 0.94 MGD Design Flow
15	Public Notice
16	EPA Checklist dated August 17, 2012

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Gordonsville STP - #VA0021105

TO: Kultar Singh, NRO

FROM: Paul Herman, WQAP

DATE: May 8, 1996

COPIES: Ron Gregory, Charles Martin, Eugene Powell, File

The Gordonsville STP discharges to an unnamed tributary of the South Anna River near Gordonsville, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

At the discharge point, the receiving stream is depicted as intermittent on the USGS Gordonsville Quadrangle topographic map. The flow frequencies for intermittent streams are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and harmonic mean. For modeling purposes, flow frequencies have been determined for the perennial reach of the receiving stream. The receiving stream becomes perennial at its confluence with the South Anna River. Therefore, flow frequencies have been determined for the South Anna River just upstream of its confluence with the discharge receiving stream.

The VDEQ conducted several flow measurements on the South Anna River in 1981 and since 1991. The measurements were made approximately 0.2 miles west of the Gordonsville STP. The measurements correlated very well with the same day measurements made at the discontinued gage on the Contrary Creek near Mineral, VA #01670300. The Contrary Creek gage operated continuously from 1976 through 1986. The measurements were plotted on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies from the reference gage were plotted on the regression line and the associated flow frequencies at the measurement site were determined from the graph.

The flow frequencies for the measurement site represent the flows in the South Anna River at the point just above its confluence with the discharge receiving stream. The data for the reference gage and the measurement site are presented below. The values at the measurement site do not account for discharges or withdrawals which may lie upstream.

Contrary Creek near Mineral, VA (#01670300):

Drainage Area = 5.53 mi^2

1Q10 = 0.04 cfs	High Flow 1Q10 = 0.64 cfs
7Q10 = 0.05 cfs	High Flow 7Q10 = 0.79 cfs
30Q5 = 0.21 cfs	HM = 0.90 cfs

South Anna River at measurement site (#01671200):

Drainage Area = 5.0 mi^2

1Q10 = 0.0 cfs	High Flow 1Q10 = 0.112 cfs
7Q10 = 0.001 cfs	High Flow 7Q10 = 0.17 cfs
30Q5 = 0.015 cfs	HM = 0.0 cfs

The high flow months are November through April.

If there are any questions concerning this analysis, please let me know.

TClemons@rapidan.org

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

December 6, 2011

Louisa County
RSA Gordonsville WWTP Disinfection Improvements Project
PTL#25447, Permit VA0021105

Mr. Dudley Pattie
General Manager
Rapidan Service Authority
11235 Spotswood Trail
PO Box 148
Ruckersville VA 22968

Dear Mr. Pattie:

In accordance with 9VAC25-790-190 of the Commonwealth of Virginia's *Sewage Collection and Treatment Regulations*, this letter transmits the Certificate to Operate (CTO) for RSA Gordonsville WWTP Disinfection Improvements Project located in Louisa County. The CTO is being issued based on the Application for Certificate to Operate dated November 29, 2011, and received by this office on December 5, 2011.

If you have any questions about this letter or the approval process, please contact me at (703)-583-3834 or alison.thompson@deq.virginia.gov.

Respectfully,

Alison Thompson
Water Permits Technical Reviewer

cc: VPDES Permit File VA0021105 JCC -> file
VDH District Office, attn: Environmental Health Manager
Louisa County Local Building Official
Robert Mangrum, Wiley and Wilson, 127 Nationwide Dr, Lynchburg, VA 24502-4272

Attachment: CTO

Attachment 2

APPLICATION for CERTIFICATE TO OPERATE
Under the Sewage Collection and Treatment Regulations 9 VAC 25-790 and/or the Water Reclamation and Reuse Regulation 9 VAC 25-740

See instructions. Submit 1 copy of this form and any attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) Rapidan Service Authority Gordonsville Wastewater Treatment Plant Disinfection Improvements Project RSA self performed work under direction of Engineer of Record.	
Location of Project: Gordonsville	County/City: Louisa/Gorsdonsville
Receiving Wastewater Collection System(s):	
Receiving Sewage Treatment Plant(s):	
PROJECT OWNER: Rapidan Service Authority	**RESPONSIBLE ENGINEER**
Owner Contact Name: Dudley Pattie	Name: C. Robert L. Mangrum P.E. BCEE
Title: General Manager	Company Name: Wiley|Wilson
Address: 11235 Spotswood Trail PO Box 148 Ruckersville, VA 22968	Address: 127 Nationwide Drive Lynchburg, VA 24502-4272
Phone: 434.985.7811	Phone: 434.947.1643
Email: dpattie@rapidan.org	Email: rmangrum@wileywilson.com
Owner Signature and Date: Dudley Pattie 11/29/11	

PTL NUMBER FROM CERTIFICATE TO CONSTRUCT: 25344

Attach Copy of the original Certificate to Construct if issued prior to November 9, 2008. If applicable, provide verification of compliance with any conditions in the Certificate to Construct.

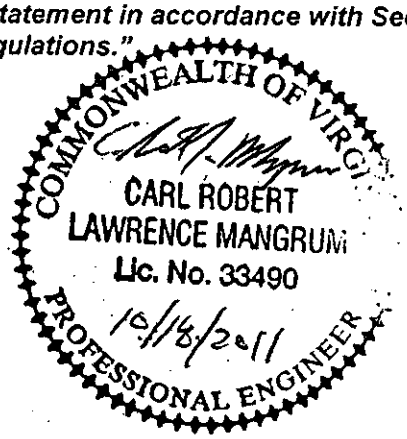
Design Flow: (a) average daily flow (MGD): 0.667 (b) peak flow (MGD): _____
For sewage treatment plant, water reclamation or satellite reclamation projects, provide the VPDES/VPA Permit Number: _____

Is a new Discharge Monitoring Report (DMR) or other monthly monitoring report required? Yes ☐ No ☒
For Pump Stations, Sewage Treatment Plants, and Reclamation Systems, check Reliability Class: I ☐ II ☒ III ☐ NA ☐

Two options are provided for the Statement of Completion, depending on whether the project is being authorized under the Sewage Collection and Treatment Regulations, the Water Reclamation and Reuse Regulations, or BOTH. Please check the appropriate box and then provide signature and seal below as indicated.

☒ *The following statement of completion for issuance of a Certificate to Operate under the Sewage Collection and Treatment Regulations must be signed and sealed by the responsible engineer.* (DEQ will not conduct a confirming inspection.)

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-790-180.B, and inspections have been performed to make this statement in accordance with Section 9 VAC 25-790-180.C.1 of the Sewage Collection and Treatment Regulations."



Licensed Engineer's Signature and original seal (signed and dated)

Reuse Regulation must be signed and sealed by the responsible engineer. (DEQ will not conduct a confirming inspection.)

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-740-120-B.2.b. and inspections have been performed to make this statement in accordance with Section 9 VAC 25-40-120.B.3.a. of the Water Reclamation and Reuse Regulations."

Licensed Engineer's Signature and original seal (signed and dated)

For DEQ use only:

In accordance with *Code of Virginia* 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, serves as the **Certificate to Operate** for the referenced project.

Alison Thompson		12/6/11	25447
Name	Signature	Date	CTO PTL Number

Department of Environmental Quality Authorized Representative

An Operation and Maintenance Manual must be submitted to the DEQ Regional Office in accordance with 9 VAC 25-790 for sewage treatment plants, 9 VAC 25-740 for water reclamation systems and satellite reclamation systems and VPDES or VPA permit requirements.

For pump stations, an Operation and Maintenance Manual must be maintained for the facility in accordance with 9 VAC 25-790, but is NOT to be submitted to DEQ. The pump station must be operated and maintained in accordance with that manual.

Project Description:

The Disinfection Improvements Project consists of upgrading an existing wastewater treatment plant to meet enhanced disinfection requirements. The facility is a 0.667 million gallon per day plant. New/upgraded facilities include: Conversion of an existing basin to a chlorine contact basin; installation of piping to allow discharge from existing Outfall 101 to be diverted into either the chlorine contact basin or the large holding pond: A future liquid chlorine (sodium hypochlorite) chemical storage and feed facilities for use as needed.

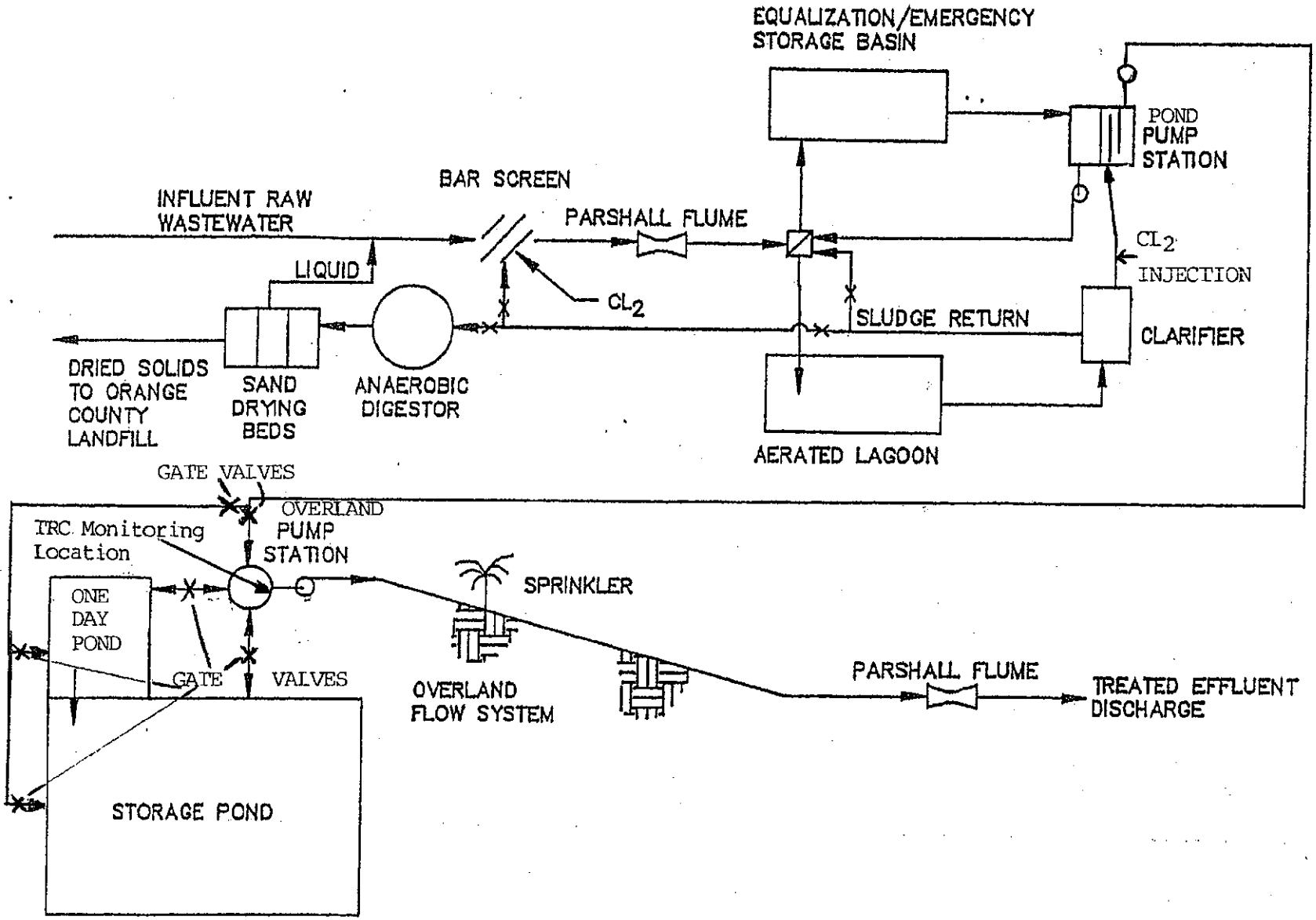
Chlorine addition will occur at the existing chlorine addition point (outfall 101) immediately upstream of the Pond Pumping Station via the existing gas chlorination system. Wastewater will be pumped from the Pond Pumping Station into the chlorine contact basin. flow by gravity to the Overland Flow Pumping Station, and be pumped to the existing overland flow, de-chlorination and effluent re-aeration systems.

A future liquid chlorine addition system will be used on an as-needed basis to supplement the gas chlorination system. That system will be located in the Overland Flow Pump Station and inject chlorine prior to the chlorine contact basin.

Flow may be directed to and stored as needed in the existing large storage pond either by pumping from the Pond Pumping Station. by gravity flow via interconnected piping between the large pond the existing small pond (chlorine contact basin) or by gravity from the Overland Flow Pumping Station. Stored water will be returned to the chlorine contact basin using a temporary pump and piping as needed.

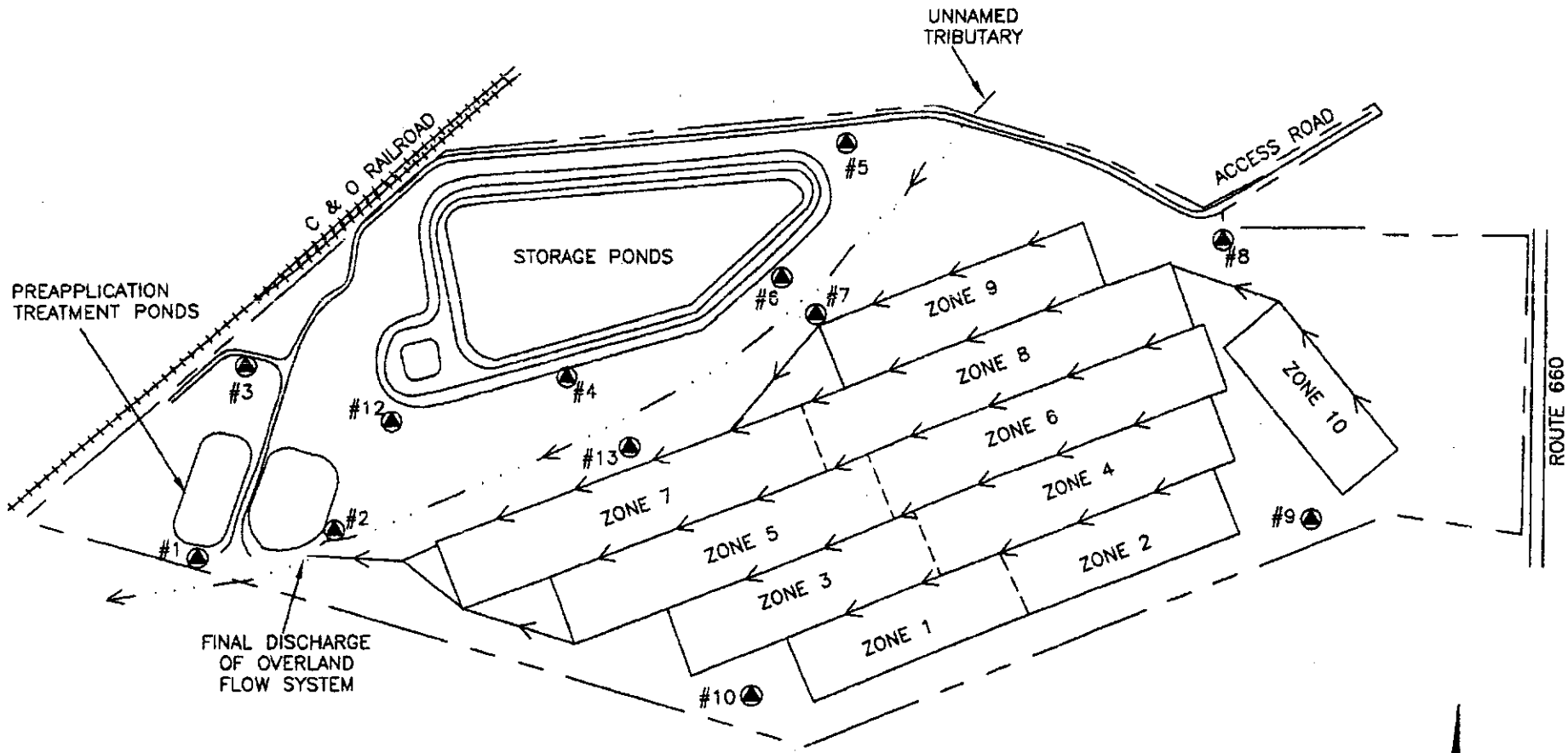
Full scale pilot monitoring indicates that the facilities VPDES permit requirements for disinfection were achieved using this system.

This facility operates under a VPDES permit that requires it to meet Reliability Class II. All pumping systems. to include chemical metering systems, are redundant.



SCHEMATIC FLOW DIAGRAM

66820 07-05-SPM-01.DWG 5/15/07 NTS DDP REV



LEGEND

- PROPERTY LINE
- RAILROAD
- FLOW SYSTEM
- DITCH LINE
- #10 EXISTING GROUND WATER MONITORING WELL

ERM Environmental Resources Management	**SITE PLAN MAP** **GORDONSVILLE OVERLAND FLOW SYSTEM** **GORDONSVILLE, VIRGINIA**	FIGURE **1-1**

DEQ

WASTEWATER FACILITY INSPECTION REPORT

PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0021105	**3/29/07**		**2/28/12**

Facility Name	Address	Telephone Number
Gordonsville STP	**735 Red Hill Road, Gordonsville, VA 22942**	**540-832-2580**
Owner Name	Address	Telephone Number
Rapidan Service Authority	**P.O. Box 148, Ruckersville, VA 22968**	**434-985-7811**
Responsible Official	Title	Telephone Number
Dudley M. Pattie	**General Manager**	**434-985-7811**
Responsible Operator	Operator Cert. Class/number	Telephone Number
Dale Davenport	**1965006255**	**540-832-2580**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal	**X**	Minor	**X**	Minor		Secondary	

INFLUENT CHARACTERISTICS:	DESIGN:
Flow	**0.687 mgd**
Population Served	**Unknown**
Connections Served	**Unknown**
BOD_5 Date	**300**
TSS Date	**300**

EFFLUENT LIMITS: SPECIFY UNITS

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
FLOW (MGD)		**.687**	**NL**	**NOx**		**NL**	
pH (su)	**6.0**		**9.0**	**TKN**		**NL**	
BOD5		**10.0**	**15.0**	**TP**		**NL**	
TSS		**10.0**	**15.0**	**COPPER (ug/L)**		**17**	**17**
FECAL #/100 ML		**NL**		**NH3 (MAY-OCT)**		**1.13**	**1.52**
DO	**6.5**			**CL2,INST RES MAX**		**.008**	**.010**

Receiving Stream	**UT, SOUTH ANNA RIVER**
Basin	**YORK RIVER**
Discharge Point LAT	38° 07' 55" N
Discharge Point LONG	78° 12' 00" W

Revised: 06-2011

Attachment 4

VPDES NO. **VA0021105**

DEQ
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date: **1/5/2012**

Date form completed: **2/14/2012**

Inspection by: **APRIL J. YOUNG**

Inspection agency: **DEQ**

Time spent (hours w/ travel & report): **20**

Announced: **Yes**

Reviewed by: Earl L. Stah

Scheduled: **Yes**

Present at inspection: **TIM CLEMONS**

TYPE OF FACILITY:

	Domestic	**Industrial**	
[ ] Federal	[ ] Major	[ ] Major	[ ] Primary
[X] Nonfederal	[X] Minor	[ ] Minor	[ ] Secondary

Type of inspection:

[X] Routine
[ ] Compliance/Assistance/Complaint
[ ] Reinspection

Date of last inspection: **4/13/2006**
Agency: **DEQ**

Population served: **unknown**

Connections served: unknown

Last month grab: {parameter} {conc}mg/L Flow: MGD
(Influent)Month

Other pH: S.U.

Last month grab: (Effluent)	pH: **6.7/7.2 S.U.**	Flow: 0.671 MGD	
	BOD5: **4 mg/L**	TSS: **3 mg/L**	D.O. **9.4 mg/L**
First Quarter average: (Effluent)	pH: **6.7 S.U.**	Flow: 0.53 MGD	
	BOD5: **1.3 mg/L**	TSS: **2 mg/L**	D.O. **8.4 mg/L**

DATA VERIFIED IN PREFACE [X] Updated [ ] No changes

Has there been any new construction? [X] Yes [ ] No

If yes, were plans and specifications approved? [X]Yes [ ]No [ ]NA

DEQ approval date: **8/17/2011**

(A) PLANT OPERATION AND MAINTENANCE

1. Class and number of licensed operators: I - , II - **2** , III - , IV - , Trainee - **1**

2. Hours per day plant is manned: **8 HRS**

3. Describe adequacy of staffing. [ ] Good [X] Average [ ] Poor

4. Does the plant have an established program for training personnel? [X]Yes [ ] No

5. Describe the adequacy of the training program. [ ] Good [X] Average [ ] Poor

6. Are preventive maintenance tasks scheduled? [X]Yes [ ]No

7. Describe the adequacy of maintenance. [ ] Good [X] Average [ ] Poor*

8. Does the plant experience any organic/hydraulic overloading? If yes, identify cause and impact on plant: [ ] Yes [X] No

9. Any bypassing since last inspection? [ ] Yes [X] No

10. Is the standby electric generator operational? [X] Yes [ ] No* [X] NA

11. Is the STP alarm system operational? [X] Yes [ ] No* [ ] NA

12. How often is the standby generator exercised? **NA**
    Power Transfer Switch? **NA** Alarm System? **NA**

13. When was the cross connection control device last tested on the potable water service? **4/12 NXT**

14. Is sludge being disposed in accordance with the approved sludge disposal plan? [ ] Yes [ ] No [X] NA

15. Is septage received by the facility? [X] Yes [ ] No
    Is septage loading controlled? [ ] Yes [X] No
    Are records maintained? [X] Yes [ ] No

16. Overall appearance of facility: [ ] Good [X] Average [ ] Poor

Comments:

(B) PLANT RECORDS

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	[X] Yes	[ ] No	[ ] NA
Instrument maintenance and calibration	[X] Yes	[ ] No	[ ] NA
Mechanical equipment maintenance	[X] Yes	[ ] No	[ ] NA
Industrial waste contribution (Municipal Facilities)	[ ] Yes	[ ] No	[ ] NA

2. What does the operational log contain?

[X] Visual observations
[X] Laboratory results
[ ] Control calculations
[X] Flow measurement
[X] Process adjustments
[ ] Other (specify)

Comments:

3. What do the mechanical equipment records contain?

[X] As built plans and specs
[X] Manufacturers instructions
[X] Lubrication schedules
[X] Spare parts inventory
[X] Equipment/parts suppliers
[ ] Other (specify)

Comments:

4. What do the industrial waste contribution records contain (Municipal Only)? **NA**

[ ] Waste characteristics
[ ] Impact on plant
[ ] Locations and discharge types
[ ] Other (specify)

Comments:

5. Which of the following records are kept at the plant and available to personnel?

[X] Equipment maintenance records
[ ] Industrial contributor records
[X] Sampling and testing records
[X] Operational Log
[X] Instrumentation records

6. Records not normally available to plant personnel and their location:

7. Were the records reviewed during the inspection?	[X] Yes	[ ] No
8. Are the records adequate and the O & M Manual current?	[X] Yes	[ ] No
9. Are the records maintained for the required 3-year time period?	[X] Yes	[ ] No

Comments: **SMP REQUIRES UPDATE**

(C) SAMPLING

1. Do sampling locations appear to be capable of providing representative samples? [X] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [X] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [X] Yes [ ] No*
4. Are composite samples collected in proportion to flow? [X] Yes [ ] No* [ ] NA
5. Are composite samples refrigerated during collection? [X] Yes [ ] No* [ ] NA
6. Does plant maintain required records of sampling? [X] Yes [ ] No*
7. Does plant run operational control tests?. [X] Yes [ ] No

Comments:

(D) TESTING

1. Who performs the testing? [X] Plant [ ] Central Lab [X] Commercial Lab

   Name: **Cl2, pH, DO** **ESS: ALL OTHER TESTING**

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **HACH POCKET COLORIMETER**
3. Does plant appear to have sufficient equipment to perform required tests? [X] Yes [ ] No*
4. Does testing equipment appear to be clean and/or operable? [X] Yes [ ] No*

Comments:

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
   [ ] Yes [ ] No [X] NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
   [ ] Yes [ ] No [X] NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:
   [ ] Yes [ ] No* [X] NA

Comments:

Problems identified at last inspection: 4/13/2006		Corrected	Not Corrected
1.	O & M manual revised	[X]	[ ]
2.	Digester and drying beds not operational	[ ]	[X]
3.		[ ]	[ ]
4.		[ ]	[ ]
5.		[ ]	[ ]
6.		[ ]	[ ]
7.		[ ]	[ ]
8.		[ ]	[ ]
9.		[ ]	[ ]
10.		[ ]	[ ]

CURRENT INSPECTION SUMMARY

Comments:

Sludge pumping, anerobic digester and drying beds are not in use (disrepair). RSA planes to use a portable sludge press when they need to process sludge. The Sludge Management Plan needs to be revised.

REQUEST for CORRECTIVE ACTION:

SMP needs to be revised
Electrical panels with rusted through holes need to be sealed and repaired.
Cattails in lagoon require attention

UNIT PROCESS: Screening/Comminution

1. Number of Units: Manual: **1** Mechanical: **0**

   Number in operation: Manual: **1** Mechanical: **0**

2. Bypass channel provided: [ ] Yes [X] No*
   Bypass channel in use: [ ] Yes [ ] No

3. Area adequately ventilated: [X] Yes [ ] No*

4. Alarm system for equipment failure or overloads: [ ] Yes [X] No*

5. Proper flow distribution between units: [ ] Yes [ ] No [X] NA

6. How often are units checked and cleaned? **Three times per day**

7. Cycle of operation: **Continuous**

8. Volume of screenings removed: **0.5 cubic feet per day**

9. General condition: [ ] Good [X] Fair [ ] Poor

Comments: **Screen and rags are sent to Orange County Landfill. Mechanical unit at repair.**

UNIT PROCESS: Grit Removal

1. Number of units: In operation:

2. Unit adequately ventilated: [ ] Yes [ ] No*

3. Operation of grit collection equipment: [ ] Manual [ ] Time clock [ ] Continuous duty

4. Proper flow distribution between units: [ ] Yes [ ] No* [ ] NA

5 Daily volume of grit removed:

6. All equipment operable: [ ] Yes [ ] No*

7. General condition: [ ] Good [ ] Fair [ ] Poor

Comments: **No grit removal at the facility.**

UNIT PROCESS: Flow Measurement

[X] Influent [ ] Intermediate [ ] Effluent

1. Type measuring device: **Parshall flume with GTI Model 53 ultrasonic**
2. Present reading: **200 gpm**
3. Bypass channel: [ ] Yes [X] No
   Metered: [ ] Yes [ ] No
4. Return flows discharged upstream from meter: [ ] Yes [X] No
   Identify:
5. Device operating properly: [X] Yes [ ] No*
6. Date of last calibration: **4/11 Clayton Pope and Associates**
7. Evidence of following problems:
   a. obstructions [ ] Yes* [X] No
   b. grease [ ] Yes* [X] No
8. General condition: [X] Good [ ] Fair [ ] Poor

Comments:

UNIT PROCESS: Flow Equalization

1. Type: [ ] In-line [X] Side-line [ ] Spill pond — Number of cells: **Lagoon not in use.**
2. What unit process does it precede?
3. Is volume adequate? [ ] Yes [ ] No
4. Mixing: [ ] None [ ] Diffused air [ ] Fixed mechanical [ ] Floating mechanical
5. Condition of mixing equipment: [ ] Good [ ] Average [ ] Poor
6. How drawn off?
   A. Pumped from: [ ] Surface [ ] Sub-surface [ ] Adjustable
   B. Weir [ ] Surface [ ] Sub-surface
7. Is containment structure in good condition? [ ] Yes [ ] No
8. Are the facilities to flush solids and grease from basin walls adequate? [ ] Yes [ ] No [ ] NA
9. Are there facilities for withdrawing floating material and foam? [ ] Yes [ ] No
10. How are solids removed? [ ] Drain down [ ] Drag line [ ] NA [ ] Other

    Is it adequate? [ ] Yes [ ] No
11. Is the emergency overflow in good condition? [ ] Yes [ ] No [ ] NA
12. Are the depth gauges in good condition? [ ] Yes [ ] No [ ] NA

Comments: **Flow EQ not in use since flows have reduced. Some sludge in Lagoon.**

UNIT PROCESS: Ponds/Lagoons

1.	Type:	[X] Aerated	[ ] Unaerated	[ ] Polishing	
2.	No. of cells:	**1**	In operation:	**1**	
3.	Color:	[ ] Green	[ ] Brown	[ ] Light Brown	[X] Grey [ ] Other:
4.	Odor:	[ ] Septic*	[X] Earthy	[ ] None	[ ] Other:
5.	System operated in:	[ ] Series	[ ] Parallel	[X] NA	
6.	If aerated, are lagoon contents mixed adequately?			[X] Yes	[ ] No* [ ] NA
7.	If aerated, is aeration system operating properly?			[X] Yes	[ ] No* [ ] NA
8.	Evidence of following problems:				
	a. vegetation in lagoon or dikes			[X] Yes*	[ ] No
	b. rodents burrowing on dikes			[ ] Yes*	[X] No
	c. erosion			[ ] Yes*	[X] No
	d. sludge bars			[ ] Yes*	[X] No
	e. excessive foam			[ ] Yes*	[X] No
	f. floating material			[ ] Yes*	[X] No
9.	Fencing intact:			[ ] Yes	[X] No*
10.	Grass maintained properly:			[X] Yes	[ ] No
11.	Level control valves working properly:			[X] Yes	[ ] No*
12.	Effluent discharge elevation:			[ ] Top	[X] Middle [ ] Bottom
13.	Freeboard:			**2** ft.	
14.	Appearance of effluent:			[ ] Good	[X] Fair [ ] Poor
15.	General condition:			[ ] Good	[X] Fair [ ] Poor
16.	Are monitoring wells present?			[X] Yes	[ ] No
	Are wells adequately protected from runoff?			[X] Yes	[ ] No* [ ] NA
	Are caps on and secured?			[X] Yes	[ ] No* [ ] NA

Comments: **2 aerators on in the winter and 3 on in the summer. Cattails in lower portion of lagoon.**

UNIT PROCESS: Chlorination

1 No. of chlorinators: **1** In operation: **1**

2. No. of evaporators: **0** In operation: **0**

3. No. of chlorine contact tanks: **1** In operation: **1**

4. Proper flow distribution between units: [ ] Yes [ ] No* [X] NA

5. How is chlorine introduced into the wastewater?
   [ ] Perforated diffusers
   [X] Injector with single entry point
   [ ] Other

6. Chlorine residual in basin effluent: **1.5-2.5 mg/L**

7. Applied chlorine dosage: **5-8 lbs/day**

8. Contact basins adequately baffled: [X] Yes [ ] No*

9. Adequate ventilation:
   a. cylinder storage area [X] Yes [ ] No*
   b. equipment room [X] Yes [ ] No*

10. Proper safety precautions used: [X] Yes [ ] No*

11. General condition: [ ] Good [X] Fair [ ] Poor

Comments: **Declorination tablets placed in effluent trough for declorination.**

UNIT PROCESS: Sedimentation

[ ] Primary [X] Secondary [ ] Tertiary

1.	Number of units: **2**	In operation: **1**		
2.	Proper flow distribution between units:	[ ] Yes	[ ] No*	[X] NA
3.	Signs of short circuiting and/or overloads:	[ ] Yes	[X] No	
4.	Effluent weirs level: Clean:	[X] Yes [X] Yes	[ ] No* [ ] No*	
5.	Scum collection system working properly:	[X] Yes	[ ] No*	[ ] NA
6.	Sludge collection system working properly:	[X] Yes	[ ] No*	
7.	Influent, effluent baffle systems working properly:	[X] Yes	[ ] No*	
8.	Chemical addition: Chemicals:	[ ] Yes	[X] No	
9.	Effluent characteristics: **Cloudy**			
10.	General condition:	[ ] Good	[X] Fair	[ ] Poor

Comments: **Flight boards are being replaced.**

UNIT PROCESS: Sewage Pumping

1. Name of station: **Chlorine wet well pump station**

2. Location (if not at STP):

3. Following equipment operable:

a.	all pumps	[X] Yes	[ ] No*
b.	ventilation	[ ] Yes	[ ] No*
c.	control system	[X] Yes	[ ] No*
d.	sump pump	[ ] Yes	[ ] No*
e.	seal water system	[ ] Yes	[ ] No*

4. Reliability considerations:

a.	Class	[ ] I	[X] II	[ ] III
b.	Alarm system operable:	[X] Yes	[ ] No*	
c.	Alarm conditions monitored:			
	1. high water level	[X] Yes	[ ] No*	
	2. high liquid level in dry well	[ ] Yes	[ ] No	[X] NA
	3. main electric power	[ ] Yes	[ ] No	[X] NA
	4. auxiliary electric power	[ ] Yes	[ ] No	[X] NA
	5. failure of pump motors to start	[ ] Yes	[ ] No	[ ] NA
	6. test function	[ ] Yes	[ ] No*	
	7. other	[ ] Yes	[ ] No	
d.	Backup for alarm system operational:	[ ] Yes	[ ] No	[X] NA

e. Alarm signal reported to (identify): **Local Alarm**

f. Continuous operability provisions:

[ ] generator	[ ] two sources of power	
[ ] portable pump	[X] 1 day storage	[ ] other

5. Does station have bypass:

		[ ] Yes*	[X] No
a.	evidence of bypass use	[ ] Yes*	[X] No
b.	can bypass be disinfected	[ ] Yes	[X] No
c.	can bypass be measured	[ ] Yes	[X] No

6. How often is station checked? **3 times per day**

7. General condition: [ ] Good [X] Fair [ ] Poor

Comments: **Sludge from clarifier is pumped back to the head of the plant.**

UNIT PROCESS: Ponds/Lagoons – Storage Pond

1.	Type:	[ ] Aerated	[X] Unaerated	[ ] Polishing	
2.	No. of cells: **1**		In operation:	**1**	
3.	Color:	[ ] Green	[ ] Brown	[X] Light Brown	[ ] Grey [ ] Other:
4.	Odor:	[ ] Septic*	[ ] Earthy	[X] None	[ ] Other:
5.	System operated in:	[ ] Series	[ ] Parallel	[X] NA	
6.	If aerated, are lagoon contents mixed adequately?			[ ] Yes	[ ] No* [X] NA
7.	If aerated, is aeration system operating properly?			[ ] Yes	[ ] No* [X] NA
8.	Evidence of following problems:				
	a. vegetation in lagoon or dikes			[ ] Yes*	[X] No
	b. rodents burrowing on dikes			[ ] Yes*	[X] No
	c. erosion			[ ] Yes*	[X] No
	d. sludge bars			[ ] Yes*	[X] No
	e. excessive foam			[ ] Yes*	[X] No
	f. floating material			[ ] Yes*	[X] No
9.	Fencing intact:			[ ] Yes	[ ] No* [X] NA
10.	Grass maintained properly:			[X] Yes	[ ] No
11.	Level control valves working properly:			[X] Yes	[ ] No*
12.	Effluent discharge elevation:			[X] Top	[ ] Middle [ ] Bottom
13.	Freeboard:			**8** ft.	
14.	Appearance of effluent:			[ ] Good	[X] Fair [ ] Poor
15.	General condition:			[X] Good	[ ] Fair [ ] Poor
16.	Are monitoring wells present?			[X] Yes	[ ] No
	Are wells adequately protected from runoff?			[X] Yes	[ ] No* [ ] NA
	Are caps on and secured?			[X] Yes	[ ] No* [ ] NA

Comments:

UNIT PROCESS: Ponds/Lagoons – Day Pond

1.	Type:	[ ] Aerated	[X] Unaerated	[ ] Polishing	
2.	No. of cells: **1**		In operation:	**1**	
3.	Color:	[ ] Green	[ ] Brown	[X] Light Brown	[ ] Grey [ ] Other:
4.	Odor:	[ ] Septic*	[ ] Earthy	[X] None	[ ] Other:
5.	System operated in:	[ ] Series	[ ] Parallel	[X] NA	
6.	If aerated, are lagoon contents mixed adequately?			[ ] Yes	[ ] No* [X] NA
7.	If aerated, is aeration system operating properly?			[ ] Yes	[ ] No* [X] NA

8. Evidence of following problems:

a.	vegetation in lagoon or dikes	[ ] Yes*	[X] No
b.	rodents burrowing on dikes	[ ] Yes*	[X] No
c.	erosion	[ ] Yes*	[X] No
d.	sludge bars	[ ] Yes*	[X] No
e.	excessive foam	[ ] Yes*	[X] No
f.	floating material	[ ] Yes*	[X] No

9.	Fencing intact:	[ ] Yes	[ ] No*	[X] NA
10.	Grass maintained properly:	[X] Yes	[ ] No	
11.	Level control valves working properly:	[X] Yes	[ ] No*	
12.	Effluent discharge elevation:	[X] Top	[ ] Middle	[ ] Bottom
13.	Freeboard:	**8** ft.		
14.	Appearance of effluent:	[ ] Good	[X] Fair	[ ] Poor
15.	General condition:	[X] Good	[ ] Fair	[ ] Poor
16.	Are monitoring wells present?	[X] Yes	[ ] No	
	Are wells adequately protected from runoff?	[X] Yes	[ ] No*	[ ] NA
	Are caps on and secured?	[X] Yes	[ ] No*	[ ] NA

Comments: **In the process of eliminating Outfall 101 with modification of flow around the pumping station.**

UNIT PROCESS: Sewage Pumping

1. Name of station: **Spray field pump station**

2. Location (if not at STP):

3. Following equipment operable:

a.	all pumps	[X] Yes	[ ] No*
b.	ventilation	[X] Yes	[ ] No*
c.	control system	[X] Yes	[ ] No*
d.	sump pump	[ ] Yes	[ ] No*
e.	seal water system	[ ] Yes	[ ] No*

4. Reliability considerations:

a.	Class	[ ] I	[X] II	[ ] III
b.	Alarm system operable:	[X] Yes	[ ] No*	
c.	Alarm conditions monitored:			
	1. high water level	[ ] Yes	[X] No*	
	2. high liquid level in dry well	[ ] Yes	[ ] No	[X] NA
	3. main electric power	[ ] Yes	[ ] No	[X] NA
	4. auxiliary electric power	[ ] Yes	[ ] No	[X] NA
	5. failure of pump motors to start	[X] Yes	[ ] No	[X] NA
	6. test function	[X] Yes	[ ] No*	
	7. other	[ ] Yes	[ ] No	
d.	Backup for alarm system operational:	[ ] Yes	[X] No	[ ] NA

e. Alarm signal reported to (identify): **Local and lab building**

f. Continuous operability provisions:

[ ] generator	[ ] two sources of power	
[ ] portable pump	[X] 1 day storage	[ ] other

5. Does station have bypass:

	[ ] Yes*	[X] No
a. evidence of bypass use	[ ] Yes*	[ ] No
b. can bypass be disinfected	[ ] Yes	[ ] No
c. can bypass be measured	[ ] Yes	[ ] No

6. How often is station checked? **Twice per day**

7. General condition: [X] Good [ ] Fair [ ] Poor

Comments: **Treated wastewater is pumped to sprinkler heads for land application.**
The 35 acre spray fields is designed with 10 spray zones that rotate. A couple of the spray heads require attention.
3 pumps in station with 1 online.

UNIT PROCESS: Flow Measurement

[ ] Influent [ ] Intermediate [X] Effluent

1. Type measuring device: **Parshall Flume with GLI Model 53 Ultrasonic**
2. Present reading**: 220 gpm**
3. Bypass channel: [ ] Yes [X] No
   Metered: [ ] Yes [ ] No
4. Return flows discharged upstream from meter: [ ] Yes [X] No
   Identify:
5. Device operating properly: [X] Yes [ ] No*
6. Date of last calibration: **Due 4/12**
7. Evidence of following problems:
   a. obstructions [ ] Yes* [X] No
   b. grease [ ] Yes* [X] No
8. General condition: [X] Good [ ] Fair [ ] Poor

Comments:

UNIT PROCESS: Post Aeration

1. Number of units: **1** In operation: **0 (Facility does not use post aeration during winter)**

2. Proper flow distribution between units: [ ] Yes [ ] No* [ ] NA

3. Evidence of following problems:
   a. dead spots [ ] Yes* [ ] No
   b. excessive foam [ ] Yes* [ ] No
   c. poor aeration [ ] Yes* [ ] No
   d. mechanical equipment failure [ ] Yes* [ ] No [ ] NA

4. How is the aerator controlled? [ ] Time clock [ ] Manual [ ] Continuous [ ] Other* [ ] NA

5. What is the current operating schedule?

6. Step weirs level: [ ] Yes [ ] No [ ] NA

7. Effluent D.O. level:

8. General condition: [ ] Good [ ] Fair [ ] Poor

Comments:

UNIT PROCESS: Effluent/Plant Outfall

1. Type Outfall [X] Shore based [ ] Submerged
2. Type if shore based: [ ] Wingwall [ ] Headwall [ ] Rip Rap [X] Direct Pipe
3. Flapper valve: [ ] Yes [X] No [ ] NA
4. Erosion of bank: [ ] Yes [X] No [ ] NA
5. Effluent plume visible? [ ] Yes* [X] No
6. Condition of outfall and supporting structures: [X] Good [ ] Fair [ ] Poor*
7. Final effluent, evidence of following problems:
   a. oil sheen [ ] Yes* [X] No
   b. grease [ ] Yes* [X] No
   c. sludge bar [ ] Yes* [X] No
   d. turbid effluent [ ] Yes* [X] No
   e. visible foam [ ] Yes* [X] No
   f. unusual color [ ] Yes* [X] No

Comments:

To:	Joan C. Crowther
From:	Katie Conaway
Date:	April 16, 2012
Subject:	Planning Statement for Gordonsville Wastewater Treatment Plant
Permit Number:	VA0021105

Discharge Type:	Municipal, Minor
Discharge Flow:	0.94 MGD
Receiving Stream:	South Anna, UT
Latitude / Longitude:	38°07'35" / -78°12'00"
Streamcode:	8-XAF
Waterbody:	VAN-F01R
Water Quality Standards:	Class III, Section 3.
Rivermile:	0.23
Drainage Area:	0.9 mi^2

1. Is there monitoring data for the receiving stream?

No.

- If yes, please attach latest summary.
- If no, where is the nearest downstream monitoring station.

The receiving stream, an Unnamed Tributary to the South Anna River (XAF), flows into the South Anna River. The nearest downstream DEQ monitoring station with ambient data is located on the South Anna River at Station 8-SAR097.82. Station 8-SAR097.82 is located approximately 2.68 rivermiles downstream from Outfall 001, at the Route 603 bridge crossing. A monitoring summary for this station, as taken from the draft 2012 Integrated Assessment, is found below:

Class III, Section 3c.

DEQ ambient and biological station 8-SAR097.82, at Route 603.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A fecal coliform TMDL for the South Anna River watershed has been completed and approved. Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. An observed effect is noted for the aquatic life use based on the above information. The fish consumption use is considered fully supporting with an observed effect based on PCBs in fish tissue. The wildlife use is considered fully supporting.

2. Is the receiving stream on the current 303(d) list?

No.

- If yes, what is the impairment?

Attachment 5

N/A

- Has the TMDL been prepared?

N/A

- If yes, what is the WLA for the discharge?

N/A

- If no, what is the schedule for the TMDL?

N/A

3. If the answer to (2) above is no, is there a downstream 303(d) listed impairment?

Yes. The South Anna River (below where the Unnamed Tributary (XAF) joins the South Anna River) is listed with several impairments.

- If yes, what is the impairment?

Recreational Use Impairment (*E. coli* Bacteria): Sufficient excursions from the maximum *E. coli* bacteria criterion (11 of 24 samples - 45.8%) were recorded at DEQ's ambient water quality monitoring station (8-SAR097.82) at the Route 603 crossing to assess this stream segment as not supporting the recreation use for the 2012 water quality assessment.

Aquatic Life Use Impairment (Benthic Macroinvertebrates): A total of 8 biological monitoring events at station 8-SAR097.82 in 2005, 2006, 2007 and 2008 resulted in a VSCI score which indicates an impaired macroinvertebrate community.

- Has a TMDL been prepared?

Recreational Use Impairment – Yes
Aquatic Life Use Impairment – No

- Will the TMDL include the receiving stream?

No. However, TMDLs consider all relevant upstream point source discharges.

- Is there a WLA for the discharge?

Yes. The bacteria TMDL for the South Anna River assigned an *E. coli* WLA of 1.64E+12 cfu/year for VA0021105.

- What is the schedule for the TMDL?

Bacteria TMDL – Approved by EPA on August 2, 2006.
Aquatic Life Use TMDL - Scheduled for completion by 2022.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit? *Note here if you need a drainage area done or a list of Individual or General Permits found within the waterbody.*

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information on other VPDES permits or VADEQ monitoring stations located within a 2 mile radius of the facility. In addition, please provide information on any drinking water intakes located within a 5 mile radius of the facility.

   There is one DEQ monitoring station within a 2 mile radius of this facility:

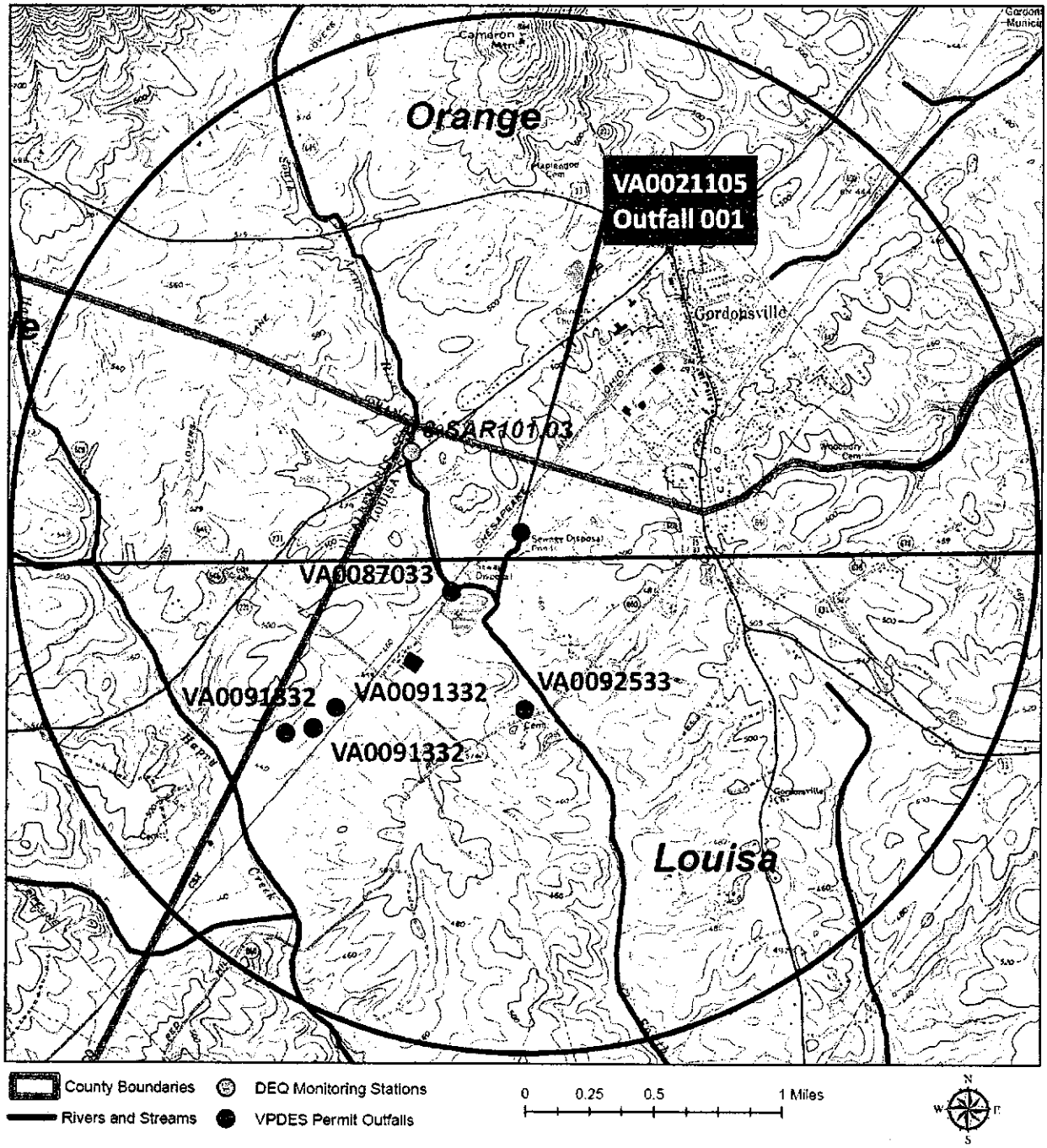
   8-SAR101.03: Located on the South Anna River at the Route 231 bridge crossing.

   There are several VDPES permits located within a 2 mile radius of this facility:

   VA0091332: Old Dominion Electric Cooperative - Louisa
   VA0087033: Dominion - Gordonsville Power Station
   VA0092533: Klockner Pentaplast of America

   There are no drinking water intakes within a five mile radius of this facility.

172 B - Gordonsville and 172 C - Boswells Tavern



FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Town of Gordonsville Permit No.: VA0021105

Receiving Stream: South Anna River, UT Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =		mg/L
90% Temperature (Annual) =		deg C
90% Temperature (Wet season) =		deg C
90% Maximum pH =		SU
10% Maximum pH =		SU
Tier Designation (1 or 2) =	1	
Public Water Supply (PWS) Y/N? =	n	
Trout Present Y/N? =	n	
Early Life Stages Present Y/N? =	y	

Stream Flows

1Q10 (Annual) =	0	MGD
7Q10 (Annual) =	0	MGD
30Q10 (Annual) =	0	MGD
1Q10 (Wet season) =	0	MGD
30Q10 (Wet season)	0	MGD
30Q5 =	0	MGD
Harmonic Mean =	0	MGD

Mixing Information

Annual - 1Q10 Mix =	100	%
- 7Q10 Mix =	100	%
- 30Q10 Mix =	100	%
Wet Season - 1Q10 Mix =	100	%
- 30Q10 Mix =	100	%

Effluent Information

Mean Hardness (as CaCO3) =	105	mg/L
90% Temp (Annual) =	22.6	deg C
90% Temp (Wet season) =		deg C
90% Maximum pH =	7.7	SU
10% Maximum pH =		SU
Discharge Flow =	0.667	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	–	–	na	9.9E+02	–	–	na	9.9E+02	–	–	–	–	–	–	–	–	–	–	na	9.9E+02
Acrolein	0	–	–	na	9.3E+00	–	–	na	9.3E+00	–	–	–	–	–	–	–	–	–	–	na	9.3E+00
Acrylonitrile [C]	0	–	–	na	2.5E+00	–	–	na	2.5E+00	–	–	–	–	–	–	–	–	–	–	na	2.5E+00
Aldrin [C]	0	3.0E+00	–	na	5.0E-04	3.0E+00	–	na	5.0E-04	–	–	–	–	–	–	–	–	3.0E+00	–	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	1.44E+01	2.13E+00	na	–	1.44E+01	2.13E+00	na	–	–	–	–	–	–	–	–	–	1.44E+01	2.13E+00	na	–
Ammonia-N (mg/l) (High Flow)	0	1.44E+01	3.58E+00	na	–	1.44E+01	3.58E+00	na	–	–	–	–	–	–	–	–	–	1.44E+01	3.58E+00	na	–
Anthracene	0	–	–	na	4.0E+04	–	–	na	4.0E+04	–	–	–	–	–	–	–	–	–	–	na	4.0E+04
Antimony	0	–	–	na	6.4E+02	–	–	na	6.4E+02	–	–	–	–	–	–	–	–	–	–	na	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	na	–	3.4E+02	1.5E+02	na	–	–	–	–	–	–	–	–	–	3.4E+02	1.5E+02	na	–
Barium	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Benzene [C]	0	–	–	na	5.1E+02	–	–	na	5.1E+02	–	–	–	–	–	–	–	–	–	–	na	5.1E+02
Benzidine [C]	0	–	–	na	2.0E-03	–	–	na	2.0E-03	–	–	–	–	–	–	–	–	–	–	na	2.0E-03
Benzo (a) anthracene [C]	0	–	–	na	1.8E-01	–	–	na	1.8E-01	–	–	–	–	–	–	–	–	–	–	na	1.8E-01
Benzo (b) fluoranthene [C]	0	–	–	na	1.8E-01	–	–	na	1.8E-01	–	–	–	–	–	–	–	–	–	–	na	1.8E-01
Benzo (k) fluoranthene [C]	0	–	–	na	1.8E-01	–	–	na	1.8E-01	–	–	–	–	–	–	–	–	–	–	na	1.8E-01
Benzo (a) pyrene [C]	0	–	–	na	1.8E-01	–	–	na	1.8E-01	–	–	–	–	–	–	–	–	–	–	na	1.8E-01
Bis2-Chloroethyl Ether [C]	0	–	–	na	5.3E+00	–	–	na	5.3E+00	–	–	–	–	–	–	–	–	–	–	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	–	–	na	6.5E+04	–	–	na	6.5E+04	–	–	–	–	–	–	–	–	–	–	na	6.5E+04
Bis 2-Ethylhexyl Phthalate [C]	0	–	–	na	2.2E+01	–	–	na	2.2E+01	–	–	–	–	–	–	–	–	–	–	na	2.2E+01
Bromoform [C]	0	–	–	na	1.4E+03	–	–	na	1.4E+03	–	–	–	–	–	–	–	–	–	–	na	1.4E+03
Butylbenzylphthalate	0	–	–	na	1.9E+03	–	–	na	1.9E+03	–	–	–	–	–	–	–	–	–	–	na	1.9E+03
Cadmium	0	4.1E+00	1.2E+00	na	–	4.1E+00	1.2E+00	na	–	–	–	–	–	–	–	–	–	4.1E+00	1.2E+00	na	–
Carbon Tetrachloride [C]	0	–	–	na	1.6E+01	–	–	na	1.6E+01	–	–	–	–	–	–	–	–	–	–	na	1.6E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	–	–	–	–	–	–	–	–	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	na	–	8.6E+05	2.3E+05	na	–	–	–	–	–	–	–	–	–	8.6E+05	2.3E+05	na	–
TRC	0	1.9E+01	1.1E+01	na	–	1.9E+01	1.1E+01	na	–	–	–	–	–	–	–	–	–	1.9E+01	1.1E+01	na	–
Chlorobenzene	0	–	–	na	1.6E+03	–	–	na	1.6E+03	–	–	–	–	–	–	–	–	–	–	na	1.6E+03

Attachment 6

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	5.9E+02	7.7E+01	na	--	5.9E+02	7.7E+01	na	--	--	--	--	--	--	--	--	--	5.9E+02	7.7E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene[C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	1.4E+01	9.3E+00	na	--	1.4E+01	9.3E+00	na	--	--	--	--	--	--	--	--	--	1.4E+01	9.3E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD[C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE[C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT[C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene[C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane[C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane[C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene[C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin[C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene[C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene [C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene [C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane [C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone [C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	1.3E+02	1.4E+01	na	--	1.3E+02	1.4E+01	na	--	--	--	--	--	--	--	--	--	1.3E+02	1.4E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.9E+02	2.1E+01	na	4.6E+03	1.9E+02	2.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.9E+02	2.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine [C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine [C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine [C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total [C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.2E+03
Silver	0	3.8E+00	--	na	--	3.8E+00	--	na	--	--	--	--	--	--	--	--	--	3.8E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	4.7E-01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	7.0E+01
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Zinc	0	1.2E+02	1.2E+02	na	2.6E+04	1.2E+02	1.2E+02	na	2.6E+04	--	--	--	--	--	--	--	--	1.2E+02	1.2E+02	na	2.6E+04

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	7.1E-01
Chromium III	4.6E+01
Chromium VI	6.4E+00
Copper	5.6E+00
Iron	na
Lead	8.6E+00
Manganese	na
Mercury	4.6E-01
Nickel	1.3E+01
Selenium	3.0E+00
Silver	1.5E+00
Zinc	4.9E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Jun-09	1	n/d	n/d
	2	n/d	n/d
	3	n/d	n/d
	4	n/d	n/d
	5	n/d	n/d
	6	6.32	17.3
	7	6.91	18.6
	8	6.88	20
	9	6.79	21.5
	10	6.84	20.9
	11	6.73	19.2
	12	6.52	21.1
	13	7.02	21.2
	14	7.12	21
	15	6.98	21.1
	16	7.1	20.7
	17	7.2	20.4
	18	7.18	20.3
	19	7.2	20.4
	20	7.12	21.8
	21	7.15	21.8
	22	6.84	21.3
	23	7.16	21.2
	24	7.45	21.3
	25	n/d	n/d
	26	n/d	n/d
	27	7.02	22.5
	28	6.9	21.3
	29	6.9	20.8
	30	7.2	20.2
Jul-09	1	7.43	20.8
	2	7.15	20.6
	3	7.19	20.4
	4	7.05	19.5
	5	7.18	20.7
	6	6.99	20
	7	6.95	20
	8	6.97	20.1
	9	6.96	20.8
	10	6.37	20.3
	11	7.06	20.2
	12	7.1	20.4
	13	7.08	21.8
	14	7.16	20.4
	15	7.03	20.7
	16	7.07	21.7

Month/ Year	Day	pH	Temperature °C
Jul-09	17	7.19	22.2
	18	7.28	21.2
	19	7.07	19.8
	20	7.16	20.4
	21	7.18	20.2
	22	7.28	20.3
	23	7.09	21.1
	24	7.18	21.3
	25	n/d	n/d
	26	n/d	n/d
	27	n/d	n/d
	28	n/d	n/d
	29	n/d	n/d
	30	n/d	n/d
	31	n/d	n/d
Aug-09	1	n/d	n/d
	2	6.44	22.7
	3	7.32	22.1
	4	7.29	21.9
	5	7.23	21.9
	6	6.97	22
	7	7.15	21.7
	8	7.47	21.3
	9	7.12	22.4
	10	7.15	22.3
	11	7.19	22.9
	12	7.27	22.5
	13	6.75	22
	14	6.91	21.8
	15	7.47	22
	16	7.54	21.9
	17	7.45	21.5
	18	7.46	22.3
	19	7.54	22.1
	20	7.13	23.1
	21	n/d	n/d
	22	7.4	22.3
	23	7.63	21.2
	24	7.63	22.2
	25	6.98	21.6
	26	7.35	21.4
	27	7.21	22.3
	28	7.11	22.9
	29	7.08	22.4
	30	7.23	22.1
	31	7.25	21.3

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Sep-09	1	7.66	20
	2	7.26	19.4
	3	8.7	17.8
	4	6.95	18.6
	5	7.51	20.4
	6	7.38	20.6
	7	7.49	20.7
	8	7.52	20.9
	9	7.65	19.5
	10	7.79	20.2
	11	6.99	19.3
	12	7.44	18.5
	13	7.65	18.9
	14	7.15	18.4
	15	6.92	19
	16	7.23	20
	17	7.51	19.8
	18	7.28	19.7
	19	7.06	19.7
	20	7.16	19.1
	21	7.11	18.7
	22	7.22	18.9
	23	7.06	19.9
	24	7.27	20.5
	25	7.33	19.2
	26	6.96	19.5
	27	6.98	18.4
	28	7.4	17.3
	29	7.45	16.5
	30	7.21	15.9
Oct-09	1	7.18	16.4
	2	6.3	14.2
	3	7.34	18.4
	4	7.05	15.3
	5	7.23	15.1
	6	7	15
	7	7.38	20.7
	8	7.14	14.8
	9	7.04	16.4
	10	7.49	18.6
	11	7.68	14.7
	12	7.55	14.6
	13	7.75	14.6
	14	7.56	13.7
	15	7.11	13.5
	16	7.4	13
	17	7.71	11.9
	18	7.47	11.7
	19	7.42	10.1
	20	7.45	10.5
	21	7.42	11.5
	22	7.48	13
	23	7.49	14.3
	24	7.44	15.3
	25	7.33	14.5
	26	7.62	13.4
	27	7.16	14.3
	28	7.09	15.9
	29	6.8	14.5
	30	7.25	15.6
	31	7.36	15.5
Nov-09	1	7.23	14.9
	2	7.27	14.4
	3	7.47	11.9
	4	7.52	10.4
	5	7.59	10.9
	6	7.57	10.7
	7	7.41	10
	8	7.39	11.9
	9	7.5	12
	10	7.24	12.8
	11	7.11	12.9
	12	7.11	10.8
	13	7.24	11.9
	14	7.16	13.3
	15	7.12	11.8
	16	7.1	11.4
	17	7.25	13.2
	18	6.87	10.8
	19	6.78	12.5
	20	6.87	13.4
	21	6.59	10
	22	7.17	10.4
	23	7.24	12.4
	24	7.29	12.9
	25	7.42	12.8
	26	7.36	10.5
	27	7.32	12.2
	28	7.36	10.8
	29	7.27	8.8
	30	7.36	11.7
Dec-09	1	7.23	9.8
	2	7.35	10.1
	3	7.3	11.8
	4	7.36	8.2
	5	7.39	9.7

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Dec-09	6	6.92	5.9
	7	6.73	6
	8	7.2	6.6
	9	6.79	7.3
	10	6.75	7.6
	11	7.19	5.9
	12	6.78	4.9
	13	6.71	6.3
	14	6.99	5.8
	15	7.19	9.3
	16	7.07	7.6
	17	7.16	5.9
	18	7.52	6.8
	19		
	20	6.77	5.7
	21	6.99	5.7
	22	7.04	5.5
	23	7.5	3.2
	24	6.55	3
	25	6.59	1.9
	26	6.77	5.2
	27	6.95	4.6
	28	7.07	5.2
	29	7.18	5
	30	7.24	4.1
	31	7.17	5.8
Jan-10	1	7.04	5.7
	2	6.74	1.9
	3	6.61	1.7
	4	n/d	n/d
	5	n/d	n/d
	6	6.9	4.6
	7	7.53	1.5
	8	7.11	1.3
	9	n/d	n/d
	10	n/d	n/d
	11	n/d	n/d
	12	n/d	n/d
	13	n/d	n/d
	14	n/d	n/d
	15	n/d	n/d
	16	7.11	3.9
	17	6.8	5.1
	18	6.84	4.9
	19	7.28	5.1
	20	6.74	7.1
	21	6.9	7
	22	6.89	6.7

Month/ Year	Day	pH	Temperature °C
Jan-10	23	6.96	6.2
	24	6.9	7
	25	6.93	9.4
	26	6.83	7.3
	27	6.86	4.6
	28	6.93	6
	29	6.71	4.8
	30	6.43	3.4
	31	n/d	n/d
Feb-10	1	n/d	n/d
	2	n/d	n/d
	3	n/d	n/d
	4	n/d	n/d
	5	n/d	n/d
	6	n/d	n/d
	7	n/d	n/d
	8	n/d	n/d
	9	n/d	n/d
	10	n/d	n/d
	11	n/d	n/d
	12	n/d	n/d
	13	n/d	n/d
	14	n/d	n/d
	15	n/d	n/d
	16	7.09	4.9
	17	6.76	4.5
	18	6.7	4.6
	19	6.75	4.2
	20	6.83	5
	21	6.72	4.1
	22	6.68	4.2
	23	6.73	6.5
	24	7.59	5.3
	25	7.02	7.2
	26	6.77	5.3
	27	6.57	5.2
	28	7.02	7.2
Mar-10	1	6.75	7
	2	6.59	6.8
	3	6.88	6.1
	4	6.49	5.9
	5	7.26	6
	6	6.74	5.1
	7	6.78	5.5
	8	6.76	7.1
	9	6.77	7.8
	10	6.71	10.3
	11	7.04	12.8

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Mar-10	12	6.94	13.9
	13	6.63	12.8
	14	6.9	12.6
	15	6.8	10.8
	16	6.74	11.1
	17	6.85	8.4
	18	6.51	9.3
	19	6.75	9.5
	20	6.71	10.5
	21	6.62	11.4
	22	6.63	15.4
	23	6.61	12.1
	24	6.82	11.5
	25	6.74	10.9
	26	6.63	13.5
	27	6.73	8.6
	28	6.7	9.4
	29	6.52	11.7
	30	6.94	12.2
	31	6.84	13
Apr-10	1	6.69	9.9
	2	6.44	11.2
	3	6.9	12.8
	4	6.47	14.4
	5	6.81	14.3
	6	6.96	18.1
	7	6.93	18.2
	8	6.91	17.8
	9	7.11	15.4
	10	7.39	12.5
	11	7.33	12.4
	12	7.17	14.3
	13	7.36	14.4
	14	7.3	15.7
	15	7.38	12.3
	16	7.25	14.5
	17	7.34	17.1
	18	7.61	13.6
	19	7.31	11.6
	20	7.26	12.6
	21	7.47	14.1
	22	6.86	13.2
	23	7.31	13.8
	24	7.11	15
	25	7.11	14.5
	26	7.26	15.9
	27	7.1	15.5
	28	7.06	11.5

Month/ Year	Day	pH	Temperature °C
Apr-10	29	7.19	13
	30	7.09	13.4
May-10	1	7.38	16.3
	2	7.45	20
	3	7.37	20.8
	4	7.64	19.8
	5	8.04	18.5
	6	6.93	18.3
	7	7.43	16.6
	8	7.23	18.8
	9	7.3	16.2
	10	7.36	14.5
	11	7.27	13.8
	12	7.44	14.7
	13	7.17	16.6
	14	6.78	16.3
	15	6.87	19
	16	7.59	18
	17	7.5	16.6
	18	7.4	14.3
	19	7.59	15.2
	20	8.03	16.6
	21	7.77	16.4
	22	7.81	18.2
	23	7.55	18.8
	24	7.68	19.9
	25	7.65	19.5
	26	7.81	18.8
	27	7.81	20.5
	28	7.34	20
	29	7.68	20.6
	30	7.68	20.8
	31	7.74	21.8
Jun-10	1	7.75	21.9
	2	7.74	21.4
	3	7.75	21.9
	4	7.74	21.8
	5	7.7	23.1
	6	7.78	23
	7	7.64	21.2
	8	7.97	19.8
	9	8.05	19.9
	10	7.85	20.6
	11	7.84	20
	12	7.93	20.8
	13	7.78	22.1
	14	7.87	22.5
	15	7.83	20.8

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Jun-10	16	7.78	22.5
	17	7.69	21.3
	18	7.81	21.2
	19	7.88	21.4
	20	7.93	23
	21	7.94	23.2
	22	7.89	22.7
	23	7.89	22.2
	24	7.91	22.9
	25	7.94	23.2
	26	8.06	22.8
	27	7.94	22.3
	28	7.76	23.1
	29	7.77	22.4
	30	7.64	22.3
Jul-10	1	n/d	n/d
	2	n/d	n/d
	3	n/d	n/d
	4	7.15	19.7
	5	6.81	21.5
	6	7.56	21.5
	7	7.68	22.4
	8	n/d	n/d
	9	n/d	n/d
	10	n/d	n/d
	11	7.38	22
	12	7.48	21.6
	13	7.66	22
	14	7.66	22.3
	15	n/d	n/d
	16	n/d	n/d
	17	n/d	n/d
	18	7.52	22.4
	19	7.74	22.6
	20	7.84	22.5
	21	7.83	22.7
	22	n/d	n/d
	23	n/d	n/d
	24	n/d	n/d
	25	7.65	23.4
	26	7.53	23.5
	27	8.01	22.7
	28	7.59	22.5
	29	7.65	23.5
	30	7.62	22.2
	31	7.99	21.5
Aug-10	1	7.74	21.5
	2	7.91	21.7

Month/ Year	Day	pH	Temperature °C
Aug-10	3	7.94	22.7
	4	7.89	23.2
	5	8	22.8
	6	7.99	22.8
	7	n/d	n/d
	8	8.02	21.2
	9	7.86	22.6
	10	7.83	23.1
	11	7.8	23.7
	12	n/d	n/d
	13	n/d	n/d
	14	n/d	n/d
	15	7.61	23.4
	16	7.53	23
	17	7.36	22.3
	18	7.87	23.4
	19	n/d	n/d
	20	n/d	n/d
	21	n/d	n/d
	22	7.6	23.5
	23	7.37	22.2
	24	7.77	22.5
	25	7.78	21.6
	26	7.61	21.1
	27	n/d	n/d
	28	n/d	n/d
	29	n/d	n/d
	30	7.18	23.2
Sep-10	1	7.2	23.2
	2	7.54	22.9
	3	7.38	22.7
	4	7.83	21.4
	5	7.76	21.1
	6	7.87	21
	7	7.4	20.9
	8	7.48	21.5
	9	n/d	n/d
	10	n/d	n/d
	11	n/d	n/d
	12	7.53	21.4
	13	7.06	19.8
	14	7.25	21.9
	15	7.05	19.8
	16	n/d	n/d
	17	n/d	n/d
	18	n/d	n/d
	19	7.64	20.5
	20	7.12	20.8

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Sep-10	21	7.29	19.2
	22	7.38	21.1
	23	7.31	21.1
	24	n/d	n/d
	25	n/d	n/d
	26	7.19	20.3
	27	7.06	19.3
	28	7.07	21
	29	7.5	19
	30	6.72	19.6
Oct-10	1	7.34	20
	2	7.52	17.4
	3	7.6	17.2
	4	7.23	17
	5	7.36	15.9
	6	7.31	15.5
	7	7.29	16.6
	8	7.54	17.2
	9	7.43	17.6
	10	7.5	16.6
	11	7.48	17.9
	12	7.49	17.3
	13	7.23	20.6
	14	n/d	n/d
	15	n/d	n/d
	16	n/d	n/d
	17	7.35	14.6
	18	7.19	15.4
	19	7.26	15.6
	20	7.08	16.4
	21	7.2	15.9
	22	7.11	14.3
	23	7.51	14.6
	24	7.11	19.3
	25	6.88	19.3
	26	6.81	17.1
	27	6.86	19.2
	28	6.66	18.5
	29	6.83	15.2
	30	7.27	12.6
	31	7.2	13.6
Nov-10	1	7.31	12
	2	6.77	10.2
	3	6.99	11.4
	4	6.81	12.1
	5	6.98	12.7
	6	7.24	11.9
	7	7.28	10.9

Month/ Year	Day	pH	Temperature °C
Nov-10	8	6.78	9.7
	9	7	11.1
	10	6.95	11.4
	11	6.93	11
	12	6.81	9.7
	13	7.03	10.2
	14	7.12	9.6
	15	7	11.1
	16	6.95	11.5
	17	7.03	13.1
	18	7.04	10.7
	19	7.08	11.1
	20	7.21	11
	21	7.35	10.5
	22	7	11.8
	23	7.18	16.1
	24	7.1	11.3
	25	7.19	12.1
	26	7.18	14.1
	27	7.2	9.7
	28	7.32	9.3
	29	7.11	7.3
	30	7.22	10.9
Dec-10	1	7.09	13.7
	2	7.08	7.8
	3	7.41	7.7
	4	7.11	7.8
	5	6.93	7.1
	6	6.76	5.3
	7	6.75	5
	8	7.01	6
	9	6.87	5
	10	6.91	4.8
	11	6.88	5.9
	12	7.18	5.8
	13	7.2	7
	14	7.05	5.1
	15	n/d	n/d
	16	n/d	n/d
	17	n/d	n/d
	18	7.17	5.8
	19	7.32	6.4
	20	7.2	8
	21	7.12	6.8
	22	7.07	4.8
	23	7.24	6.1
	24	7.5	11.9
	25	7.26	5.9

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Dec-10	26	7.14	5.2
	27	7.11	3.3
	28	6.68	5.6
	29	6.99	6.2
	30	6.94	6.4
	31	6.88	7.6
Jan-11	1	n/d	n/d
	2	n/d	n/d
	3	n/d	n/d
	4	n/d	n/d
	5	n/d	n/d
	6	n/d	n/d
	7	n/d	n/d
	8	n/d	n/d
	9	n/d	n/d
	10	n/d	n/d
	11	n/d	n/d
	12	n/d	n/d
	13	n/d	n/d
	14	n/d	n/d
	15	n/d	n/d
	16	n/d	n/d
	17	n/d	n/d
	18	n/d	n/d
	19	n/d	n/d
	20	n/d	n/d
	21	n/d	n/d
	22	n/d	n/d
	23	n/d	n/d
	24	n/d	n/d
	25	n/d	n/d
	26	n/d	n/d
	27	n/d	n/d
	28	n/d	n/d
	29	n/d	n/d
	30	n/d	n/d
	31	n/d	n/d
Feb-11	1	n/d	n/d
	2	n/d	n/d
	3	n/d	n/d
	4	n/d	n/d
	5	n/d	n/d
	6	n/d	n/d
	7	n/d	n/d
	8	n/d	n/d
	9	n/d	n/d
	10	n/d	n/d
	11	n/d	n/d

Month/ Year	Day	pH	Temperature °C
Feb-11	12	n/d	n/d
	13	n/d	n/d
	14	n/d	n/d
	15	n/d	n/d
	16	n/d	n/d
	17	n/d	n/d
	18	n/d	n/d
	19	n/d	n/d
	20	n/d	n/d
	21	n/d	n/d
	22	n/d	n/d
	23	n/d	n/d
	24	n/d	n/d
	25	n/d	n/d
	26	n/d	n/d
	27	n/d	n/d
	28	n/d	n/d
Mar-11	1	n/d	n/d
	2	n/d	n/d
	3	n/d	n/d
	4	n/d	n/d
	5	6.67	10.1
	6	6.64	12.6
	7	6.71	11.6
	8	6.76	10.1
	9	7.46	8.5
	10	6.66	11.8
	11	6.64	10.1
	12	7.27	11
	13	7.24	11.1
	14	7.42	9.5
	15	7.37	10
	16	6.26	10.3
	17	7.11	11.1
	18	6.74	13.5
	19	6.83	13.2
	20	7.02	12.2
	21	6.8	13.2
	22	7.23	14.8
	23	7.09	14.5
	24	7.17	14
	25	7.23	12.3
	26	7.19	13.7
	27	7.36	9.5
	28	7.34	9.8
	29	7.3	9.3
	30	6.67	10.4
	31	6.76	10.5

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Apr-11	1	7.29	12.3
	2	7.44	11.2
	3	6.94	12.2
	4	7.11	14.2
	5	7.13	14.4
	6	6.95	12.9
	7	7.29	14.2
	8	7.01	14.7
	9	6.85	12.4
	10	6.9	13.7
	11	7.4	17.6
	12	7.02	15.9
	13	6.97	16.2
	14	7.1	15
	15	7.02	18.2
	16	6.95	14.6
	17	7.09	16.2
	18	7.07	16.4
	19	6.97	16.1
	20	7.06	18.3
	21	7.06	17
	22	6.99	14.3
	23	7.06	15.3
	24	7.13	18.5
	25	7.26	20.5
	26	7.19	20.3
	27	7.21	20.3
	28	7.13	20.1
	29	7.14	18.6
	30	7.19	18.9
May-11	1	7.53	16.1
	2	7.63	18.2
	3	7.76	19.7
	4	7.22	15.8
	5	7.29	15.2
	6	7.26	14.8
	7	7.37	15.9
	8	7.26	17
	9	7.54	17.1
	10	7.55	16.2
	11	7.4	17.1
	12	7.41	17.5
	13	7.29	17.9
	14	7.54	17.7
	15	7.44	19
	16	6.99	19
	17	6.51	17.9
	18	6.94	18.4

Month/ Year	Day	pH	Temperature °C
May-11	19	7.27	18.1
	20	7.24	18.4
	21	7.7	20.3
	22	7.66	20.2
	23	7.5	21
	24	7.53	22.8
	25	7.69	21.5
	26	7.5	21.7
	27	7.58	22.3
	28	7.91	22.3
	29	7.6	22.8
	30	7.44	22
	31	7.64	23.9
Jun-11	1	7.66	24.3
	2	7.66	22.4
	3	7.63	20.3
	4	7.24	21.8
	5	7.64	21.7
	6	7.63	21.1
	7	7.8	21.4
	8	8.04	24.5
	9	n/d	n/d
	10	n/d	n/d
	11	n/d	n/d
	12	n/d	n/d
	13	n/d	n/d
	14	7.61	20
	15	7.34	19.3
	16	7.15	20.2
	17	7.39	20.7
	18	7.67	22.5
	19	7.65	21.8
	20	7.07	21
	21	7.21	21.4
	22	7.4	22.1
	23	7.7	22.4
	24	7.5	22.8
	25	8.04	22.4
	26	8.12	22.5
	27	7.25	20.8
	28	7.46	22.8
	29	7.34	22.7
	30	7.3	22
Jul-11	1	7.48	22.6
	2	7.88	22.6
	3	7.55	23.2
	4	7.61	24.8
	5	7.27	23.4

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Jul-11	6	7.62	23.1
	7	7.47	23.3
	8	7.6	23.3
	9	7.71	23.7
	10	7.46	23.8
	11	7.17	24.1
	12	8.05	24.6
	13	7.92	24.8
	14	7.67	22
	15	7.65	21.2
	16	n/d	n/d
	17	n/d	n/d
	18	7.76	23
	19	7.82	22.4
	20	7.84	23.7
	21	7.69	24.2
	22	6.99	22.1
	23	7.79	25.7
	24	7.42	25
	25	7.42	24.6
	26	7.74	24
	27	7.76	24.1
	28	n/d	n/d
	29	n/d	n/d
	30	n/d	n/d
	31	n/d	n/d
Aug-11	1	n/d	n/d
	2	n/d	n/d
	3	n/d	n/d
	4	n/d	n/d
	5	n/d	n/d
	6	n/d	n/d
	7	n/d	n/d
	8	6.71	23.4
	9	7.73	24.3
	10	7.78	23.2
	11	7.44	20.6
	12	n/d	n/d
	13	n/d	n/d
	14	7.44	23
	15	7.32	21.7
	16	7.45	21.8
	17	7.83	23
	18	7.26	22.9
	19	6.8	22
	20	7.28	23.6
	21	7.29	24.5
	22	7.3	22.9

Month/ Year	Day	pH	Temperature °C
Aug-11	23	7.27	22.4
	24	7.28	22.6
	25	n/d	n/d
	26	n/d	n/d
	27	n/d	n/d
	28	7.09	23.6
	29	6.93	23.1
	30	6.98	22.8
	31	n/d	n/d
Sep-11	1	n/d	n/d
	2	6.83	21.3
	3	6.97	21.5
	4	7.07	24.3
	5	7.18	23.5
	6	6.93	19.4
	7	7.04	20.1
	8	7.13	21.2
	9	7.15	22.9
	10	7.79	23.1
	11	7.23	23.3
	12	7.44	22.5
	13	7.26	22.8
	14	7.24	22.9
	15	8	23.2
	16	n/d	n/d
	17	n/d	n/d
	18	n/d	n/d
	19	n/d	n/d
	20	7.01	19.5
	21	7.07	20.1
	22	7.3	21.6
	23	7.18	20.5
	24	7.19	21.4
	25	7.45	21.4
	26	7.08	21.2
	27	7.48	22.2
	28	7.48	22.2
	29	7.44	22
	30	7.84	19.6
Oct-11	1	7.02	17.8
	2	6.98	16.1
	3	7.04	15.3
	4	7.1	18.2
	5	7.09	17.5
	6	n/d	n/d
	7	n/d	n/d
	8	7.19	17.6
	9	7.11	18.1

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Oct-11	10	7.39	18
	11	7	18.1
	12	7.19	18.2
	13	6.85	19.7
	14	7.19	19.2
	15	7.1	18.6
	16	7.05	16.4
	17	7.3	17.7
	18	7.22	17.6
	19	6.9	17.6
	20	6.98	16.5
	21	7.12	16.1
	22	7.11	14.9
	23	6.85	14.1
	24	6.86	14.5
	25	6.85	14.7
	26	6.93	13
	27	6.85	15.9
	28	7.03	13.2
	29	7.01	12.2
	30	6.8	11.8
	31	6.59	9.9
Nov-11	1	6.99	13.1
	2	6.85	12
	3	6.87	13.2
	4	6.99	13.3
	5	6.88	12.7
	6	6.9	12
	7	6.95	12.3
	8	6.77	11.8
	9	7.07	11.5
	10	6.93	12
	11	6.98	10.6
	12	6.89	10.7
	13	6.82	12.4
	14	7.05	14.2
	15	6.75	15.2
	16	6.79	14.4
	17	7.07	12.9
	18	6.91	9.1
	19	6.76	9.4
	20	7.07	12.4
	21	7.02	12.5
	22	6.89	14.1
	23	7.03	14.2
	24	6.86	12.6
	25	6.99	11.2
	26	6.77	11.4

Month/ Year	Day	pH	Temperature °C
Nov-11	27	6.81	11.3
	28	7.04	14.5
	29	6.76	14.5
	30	6.95	10.8
Dec-11	1	6.83	9.7
	2	7.24	8
	3	6.88	10.1
	4	6.86	8.3
	5	7.01	10.5
	6	6.93	12.9
	7	6.66	14.3
	8	6.79	8.7
	9	6.83	6.4
	10	6.81	7.3
	11	6.7	6.4
	12	6.73	5.2
	13	6.85	7
	14	6.76	8.2
	15	6.73	14.7
	16	6.86	10.9
	17	6.77	9.6
	18	6.79	9.4
	19	6.69	7.1
	20	6.92	9.2
	21	7.06	11.6
	22	6.99	11.7
	23	7.04	13.5
	24	7.02	10.8
	25	6.97	8.2
	26	7.06	8.6
	27	6.78	7.1
	28	6.7	8.3
	29	7.07	7.2
	30	6.94	8.5
	31	6.97	8.6
Jan-12	1	7.05	8.9
	2	7.09	8.3
	3	7.25	6.5
	4	6.75	3.9
	5	7.25	4.5
	6	7.03	7
	7	6.8	8.6
	8	6.9	8.7
	9	7.25	6.5
	10	7.12	7.5
	11	6.82	6.1
	12	6.99	10.7
	13	6.91	6.9

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Jan-12	14	6.59	5.4
	15	6.89	4.9
	16	7.03	5.3
	17	7.29	8.5
	18	7.19	8.3
	19	6.99	5.1
	20	7.05	6.5
	21	7.15	6.2
	22	7.1	6.2
	23	6.84	5.9
	24	7.26	10.7
	25	7.23	7.9
	26	6.96	10.2
	27	7.22	16.9
	28	6.99	10.1
	29	n/d	n/d
	30	n/d	n/d
	31	n/d	n/d
Feb-12	1	n/d	n/d
	2	n/d	n/d
	3	n/d	n/d
	4	n/d	n/d
	5	n/d	n/d
	6	n/d	n/d
	7	n/d	n/d
	8	n/d	n/d
	9	n/d	n/d
	10	n/d	n/d
	11	n/d	n/d
	12	n/d	n/d
	13	n/d	n/d
	14	n/d	n/d
	15	n/d	n/d
	16	n/d	n/d
	17	n/d	n/d
	18	n/d	n/d
	19	n/d	n/d
	20	n/d	n/d
	21	n/d	n/d
	22	n/d	n/d
	23	n/d	n/d
	24	n/d	n/d
	25	n/d	n/d
	26	n/d	n/d
	27	n/d	n/d
	28	n/d	n/d
Mar-12	1	n/d	n/d
	2	n/d	n/d

Month/ Year	Day	pH	Temperature °C
Mar-12	3	n/d	n/d
	4	n/d	n/d
	5	n/d	n/d
	6	n/d	n/d
	7	n/d	n/d
	8	n/d	n/d
	9	n/d	n/d
	10	n/d	n/d
	11	n/d	n/d
	12	n/d	n/d
	13	n/d	n/d
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	16	n/d	n/d
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	24	n/d	n/d
	25	n/d	n/d
	26	n/d	n/d
	27	n/d	n/d
	28	n/d	n/d
	29	n/d	n/d
	30	n/d	n/d
	31	n/d	n/d
Apr-12	1	n/d	n/d
	2	6.93	14.5
	3	6.85	14.5
	4	7.22	18
	5	7.14	14.5
	6	7.21	14
	7	7.22	14.3
	8	7.15	13
	9	7.01	152
	10	7.36	14
	11	7.18	11.7
	12	7.24	12.6
	13	7.24	14.5
	14	7.12	14.2
	15	7.57	18.6
	16	7.44	20.6
	17	7.64	19.5
	18	7.36	15.4
	19	7.26	16

Gordonsville Wastewater Treatment Plant's pH and Temperature Daily Values for June 2009 through April 2012

Month/ Year	Day	pH	Temperature °C
Apr-12	20	7.27	15.5
	21	7.44	18.6
	22	7.15	15.4
	23	7	13.2
	24	7.37	15.3
	25	7.27	17
	26	7.05	17.5
	27	7.86	17
	28	6.81	14.5
	29	7.24	17.5
	30	7.26	15.9

pH 90th Percentile = 7.7 SU

Temperature 90th Percentile = 22.6°C

Town of Gordonsville Total Hardness Data
Data from DMRs - January 1996-July 2001

Month/Yr	Hardness
Jul-01	134
Jun-01	106
Jun-01	116
May-01	122
May-01	108
Apr-01	106
Apr-01	126
Mar-01	110
Mar-11	108
Feb-01	110
Jan-01	110
Dec-00	102
Nov-00	134
Oct-00	148
Sep-00	116
Aug-00	114
Jul-00	106
Jun-00	96
May-00	102
Apr-00	96
Mar-00	104
Feb-00	180
Jan-00	128
Dec-99	96
Nov-99	92
Oct-99	114
Sep-99	98
Aug-99	98
Jul-99	102
Jun-99	92
May-99	96
Apr-99	86
Mar-99	112
Feb-99	104
Jan-99	102
Dec-98	138
Nov-98	138
Oct-98	122
Sep-98	112
Aug-98	94
Jul-98	88
Jun-98	94
May-98	96
Apr-98	78

Month/Yr	Hardness
Mar-98	102
Feb-98	38
Jan-98	64
Dec-97	84
Nov-97	80
Oct-97	110
Sep-97	134
Aug-97	96
Jul-97	116
Jun-97	154
May-97	120
Apr-97	122
Mar-97	110
Feb-97	92
Jan-97	96
Dec-96	62
Dec-96	90
Nov-96	116
Nov-96	100
Oct-96	114
Oct-96	76
Sep-96	90
Sep-96	90
Aug-96	92
Sep-96	90
Jul-96	152
Jul-96	100
Jun-96	136
Jun-96	102
May-96	90
May-96	146
Mar-96	90
Mar-96	104
Feb-96	90
Feb-96	94
Jan-96	68
Jan-96	90

Average 105

Attachment 8

VaFWIS - Department of Game and Inland Fisheries

38,07,35.0 -78,12,00.0
is the Search Point
Submit Cancel

Search Point
◉ Change to "clicked" map point
○ **Fixed** at 38,07,35.0 - 78,12,00.0

Display **Search Point** is not in center at map center

Show Position Rings
◉ Yes ○ No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
◉ Yes ○ No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search

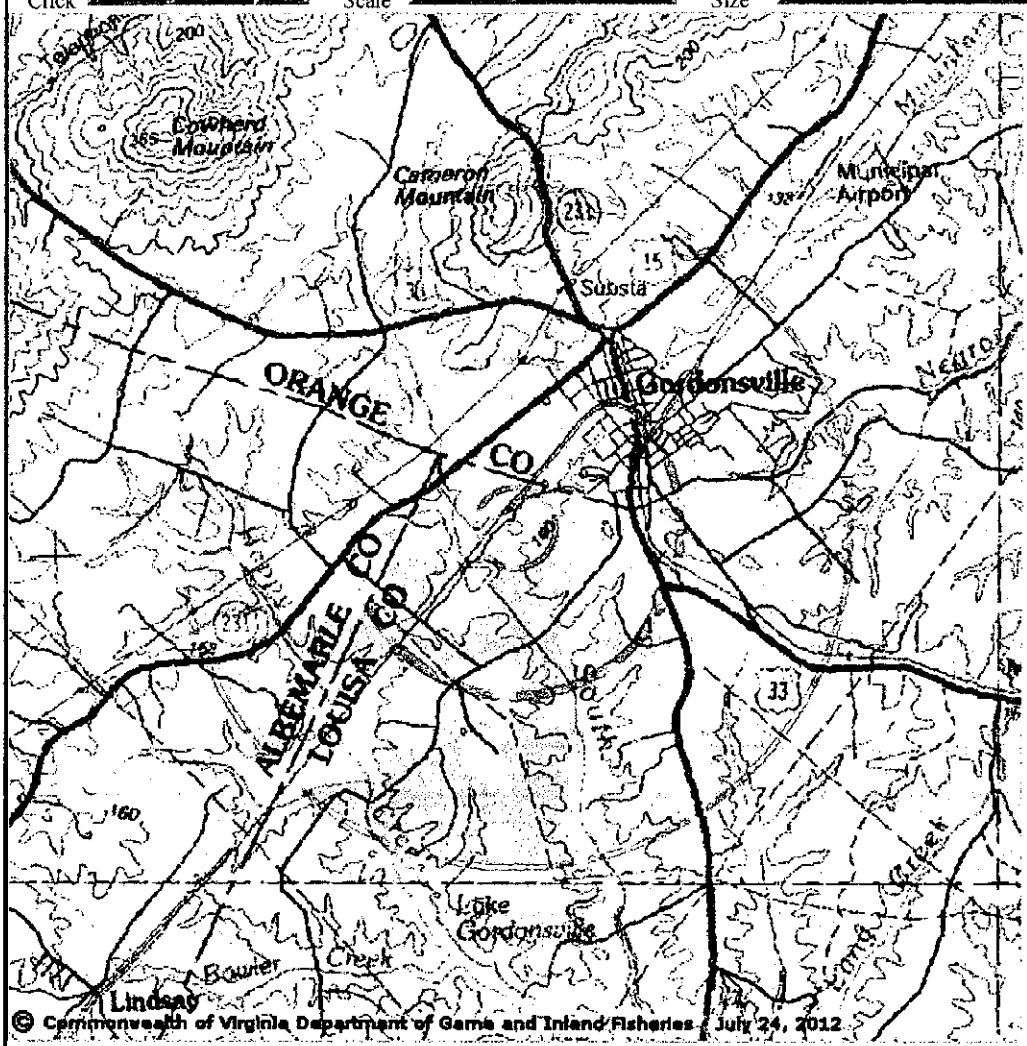
Map Overlay Legend

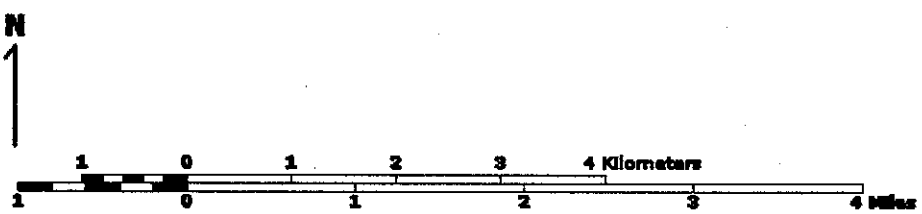
Position Rings
1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

Refresh Browser Page

Map Click Pan Map Scale In Zoom Out Screen Size Small Size Big Help





Point of Search 38,07,35.0 -78,12,00.0
Map Location 38,07,35.0 -78,12,00.0

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 740633 and top 4228343. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Attachment 9

Anadromous Fish Use Streams N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 7/24/2012, 4:30:40 PM I406928.0 report=IPA searchType= R dist= 3218 poi= 38,07,35.0 -78,12,00.0

PixelSize=64; Anadromous=0.057329; BECAR=0.039781; Bats=0.033618; Buffer=0.190164; County=0.171817; Impediments=0.037123; Init=0.230674; PublicLands=0.075435; SppObs=0.923815; TEWaters=0.054306; TierReaches=0.0526; TierTerrestrial=0.094595; Total=1.818579; Trout=0.044428

VaFWIS Initial Project Assessment Report Compiled on 7/24/2012, 4:30:39 PM

Help

Known or likely to occur within a **2 mile radius around point 38,07,35.0 -78,12,00.0 in 003 Albemarle County, 109 Louisa County, 137 Orange County, VA**

View Map of Site Location

494 Known or Likely Species ordered by Status Concern for Conservation (displaying first 23) (23 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database (s)
060017	FESE	I	Spinymussel, James	Pleurobema collina		BOVA
040096	ST	I	Falcon, peregrine	Falco peregrinus		BOVA
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus		BOVA
060081	ST	II	Floater, green	Lasmigona subviridis		BOVA
060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
060121	FC	II	Kidneyshell, fluted	Ptychobranchus subtentum		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA
060029	FS	III	Lance, yellow	Elliptio lanceolata		BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA
010077		I	Shiner, bridle	Notropis bifrenatus		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
040319		I	Warbler, black-throated green	Dendroica virens		BOVA
040306		I	Warbler, golden-winged	Vermivora chrysoptera		BOVA
040038		II	Bittern, American	Botaurus lentiginosus		BOVA
040052		II	Duck, American black	Anas rubripes		BOVA
040105		II	Rail, king	Rallus elegans		BOVA
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA
040304		II	Warbler, Swainson's	Limnothlypis swainsonii		BOVA
040266		II	Wren, winter	Troglodytes troglodytes		BOVA

To view **All 494 species** View 494

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Bat Colonies or Hibernacula: **Not Known**

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisherics.

map assembled 2012-07-24 16:28:39 (qa/qc June 12, 2012 14:14 - tn=406928 dist=3218 I)

Facility = Gordonsville WWTP (VA0021105)
Chemical = TRC
Chronic averaging period = 4
WLAa = 0.019
WLAc = 0.011
Q.L. = 0.1
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = .2
Variance = .0144
C.V. = 0.6
97th percentile daily values = .486683
97th percentile 4 day average = .332758
97th percentile 30 day average= .241210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.60883226245855E-02
Average Weekly limit = 9.59676626920106E-03
Average Monthly Limit = 7.9737131838758E-03

The data are:

0.2

7/24/2012 1:10:34 PM

Facility = Town of Gordonsville
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 14.4
WLAc = 2.13
Q.L. = .2
# samples/mo. = 12
# samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.29763729897674
Average Weekly limit = 3.14347972688492
Average Monthly LImit = 2.34148152918455

The data are:

9

Facility = Gordonsville WWTP (VA0021105)
Chemical = TRC
Chronic averaging period = 4
WLAa = 0.019
WLAc = 0.011
Q.L. = 0.1
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = .2
Variance = .0144
C.V. = 0.6
97th percentile daily values = .486683
97th percentile 4 day average = .332758
97th percentile 30 day average= .241210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.60883226245855E-02
Average Weekly limit = 9.59676626920106E-03
Average Monthly LImit = 7.9737131838758E-03

The data are:

0.2

7/25/2012 2:14:47 PM

Facility = Town of Gordonsville
Chemical = Total Recoverable Copper
Chronic averaging period = 4
WLAa = 14
WLAc = 9.3
Q.L. = 5.6
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 54
Expected Value = 6.21763
Variance = 1.20669
C.V. = 0.176674
97th percentile daily values = 9.07048
97th percentile 4 day average = 7.08641
97th percentile 30 day average= 6.49941
< Q.L. = 34
Model used = delta lognormal

No Limit is required for this material

The data are:

4.6
3.3
4.2 Units of measurement are ug/L.
4
3
4
12
2.45
7.24
6.5
6.25
6.27
6.42
8.47
3.83
2.34
2.76
7.94
6.88
5.83
5.44
7.92
4.95
4.23
5.21
3.43
3.19
1.55
1.12
1.3
3.57
6.46
3.45
3.58
6
4.3
2.62
2.86
3.32
7.71
3.95
2.06
1.46
1.74
8.72
2.62
3.91
4.56
2.67
6
7.2
7.2
7.2
7.2

Attachment 12

EMORANDUM

NRO
VA0021105

State Water Control Board

2111 North Hamilton Street | P. O. Box 11143 | Richmond, VA. 23230

SUBJECT: Town of Gordonsville

TO: Gary Moore, NRO

FROM: M. Dale Phillips

DATE: December 3, 1985

COPIES: T. M. Felvey, C. S. Turner, file

RECEIVED
DEC 6 1985
BY
NORTHERN REGIONAL
OFFICE

Gary, considering the limited confidence we may place in the current model, I agree with your proposal to relax the effluent limits for the subject facility and require a monitoring program the results of which can be used to increase our confidence in the appropriateness of the effluent limits.

It is my opinion that the monitoring program should be comprehensive and required of the discharger either via a permit special condition or consent order.

If you need further assistance, please call.

Attachment 13

MEMORANDUM

State Water Control Board

2111 North Hamilton Street P. O. Box 11143 Richmond, VA. 23230

SUBJECT: Town of Gordonsville Treatment Limits

TO: Dale Phillips - OERS

FROM: Gary Moore Gary Moore

DATE: December 3, 1985

COPIES: Fred Holt - OWRM

This will confirm our telephone conversation of November 6, 1985 regarding "interim" limits for the subject facility.

The NPDES permit for the Gordonsville STP was reissued on April 18, 1985, and contains final limits of 3 mg/l for BOD_5 and 1.5 mg/l for ammonia. As you may know, the plant is now owned by the Rapidan Service Authority (RSA).

RSA has expressed concern to this office that the stringent final limits will cost an additional $2 - 3 million to construct. Consequently, they have asked if these limits could, in any way, be relaxed. During my referenced phone conversation with you, we agreed that a BOD_5 of 10 mg/l would be acceptable if RSA agreed to conduct an in-stream monitoring program during the summer months for a three-year period. The monitoring would focus on dissolved oxygen measurements and would assess the upgrade's impact on the receiving stream. The proposed monitoring program would need to be submitted to, and approved by, the staff. You were of the opinion that the ammonia limit should remain the same as in the permit.

We are meeting with RSA on December 10, and would appreciate your concurrence on this proposal prior to that date.

Thanks for your help.

Cordaville STP 1/24/85

Due to Town's decision to pursue a joint Sewage System with Cordaville Industries, a revised STP flow has been determined by R.S. Rogers. The new flow is 0.667 mgd. I will rerun the model (memo dated July 30, 1984) to establish limits for this discharge at the existing discharge location of the Town's STP.

Basic assumptions:

1. Critical discharge = 0.03 cfs/sq mi
2. D.A. above STP (unnamed tributary) = 0.9 sq mi
   7Q10 = 0.074 mgd
3. D.A. of S. Ana above its confluence with unnamed trib = 5 sq mi
   7Q10 = 0.0967 mgd
4. D.A. from (3) to S. Ana at Rt. 15 = 5.17 sq mi
   7Q10 = 0.1 mgd

5. Distance from confluence of trib/S Ana to Rt 15 = 3.4 mi
   use velocity = 0.3 fps, $k = 0.7$/day
6. D.O. saturation, corrected for altitude = 7.52 mg/l
7. $K_2 = 4.27$ at 30C
8. $BOD_4 = BOD_5 \times 2$
9. S. Ana $BOD_5 = 10$ mg/l, D.O. = 6.5 mg/l, $NO_4 = 0.4$ mg/l.
10. $NO_4 = NH_3 \times 4.33$
    $K_n = 0.4$/day (Thomann)

Assume STP discharge is directly to S. Anna (due to short distance between Trib & S. Anna).

Therefore $Q_{STP\,eff} = Q_{Trib} + Q_{S.Anna}$

$= 0.0174 + 0.0967 = 0.1141$ mgd

Try $BOD_5 = 15$ mg/l $\quad BOD_u = 30$

$TKN = 2$ mg/l $\quad NOD_u = 8.66$

$DO_{STP} = 6.5$ mg/l

Mass balances:

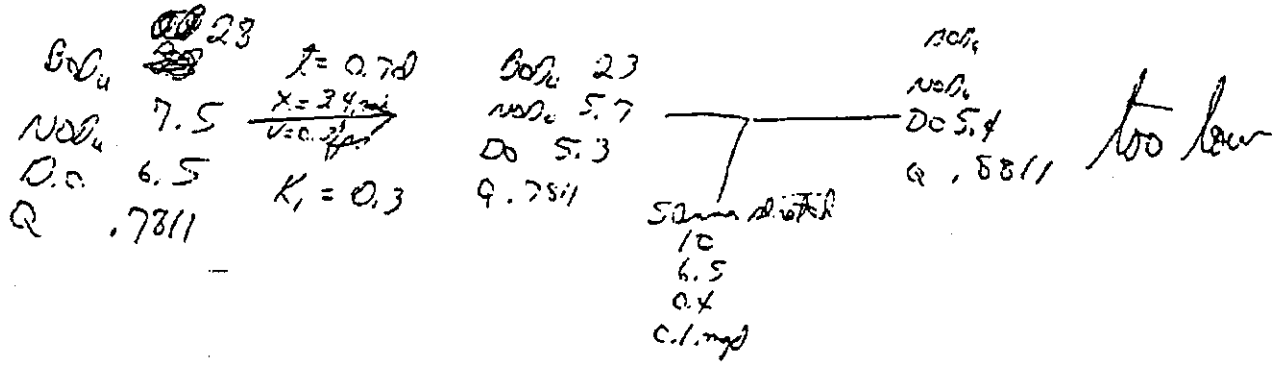
$$BOD_5 = \frac{10(.1141) + 15(0.667)}{.1141 + .667} = \frac{1.141 + 10}{0.7811} = 12.77 \text{ mg/l}$$

$BOD_u = 28$

$$NOD_u = \frac{0.4(.1141) + 8.66(.667)}{.7811} = 7.5 \text{ mg/l}$$

$DO = 6.5$

$D_o = 7.52 - 6.5 = 1.02$ mg/l



Try $BOD_5 = 10 mg/l$ $BOD_u = 20$
$TKN = 2 mg/l$ $NOD_u = 8.64$
$DO_{mix} = 6.5$

Mass balance:

$BOD_5 = 10 mg/l$ $BOD_u = 20$
$NOD_u = 7.5 mg/l$
$D_o = 1.02$

DO at $t = 0.7 = 5.77$
add in stretch flow, $\Delta DO = 5.85$ 5 kill too low

Try $BOD_5 = 10 mg/l$
$TKN = 1.5 mg/l$ $NOD_u = 6.5 mg/l$
$D_o = 1.02$

Mass balance:
$BOD_5 = 10 mg/l$ $BOD_u = 20$
$NOD_u = \frac{0.4(.1141) + 6.5(.667)}{.7811} = 5.6 mg/l$

DO at $t = 0.7 = 5.9$
add stretch flow, $\Delta DO = 6.0$

Do Sensitivity runs:

a. double K_1, min DO = 5.1
b. double K_N, min D.O. = 5.6
c. $K_2/2$, min D.O. = 4.7
d. double K_1 & K_n, $K_2/2$, min D.O. = 3.2

Not acceptable.

Try $BOD_5 = 7$
TKN = 1 $NO_3 = 4.33$
Q = 1.02.

Mass balance

$$BOD_5 = \frac{10(0.1141) + 7(.667)}{.7611} = 7.5$$

$BOD_4 = 15$

$NO_3 = 3.8$
Adjust K_1 to 0.2 to reflect lower BOD
DO at $t = 0.7 = 6.6$ mg/l.

Sensitivity runs:
a. double K_1, min D.O. = 6.1
b. double K_n, min DO = 6.3
c. $K_2/2$, min DO = 5.8
d. double K_1 & K_n, $K_2/2$, min D.O. = 4.7
Risks are still unacceptable.

Try $BOD_5 = 3$ mg/l

TKN = 1 mg/l. NH3

$D_a = 1.02$

Mass balance

$$BOD_5 = \frac{10(.1141) + 3(.667)}{.7911} = 4$$

$BOD_4 = 8$

$NOD_4 = 3.8$

DO at $t = 0.7 = 6.9$ OK.

Sensitivity runs:

a. Double K_1, min D.O. = 6.5

b. Double K_N, min D.O. = 6.5

c. $K_2/2$, min DO = 6.3

d. Double K_1 & K_n, $K_2/2$, min DO = 5.5

Acceptable risk, minimal probability of in-stream D.O. problems.

Try $BOD_5 = 5$
$TKN = 1.5$

Mass balance

$$BOD_5 = \frac{10(.1141) + 5(.667)}{.7811} = 5.7$$

$BOD_4 = 11.4$

$NO_4 = 5.6$ mg/l

DO at $t = 0.7 = 6.6$ OK.

Sensitivity runs:

a. Double K_1, min DO = 6.2
b. Double K_n, min DO = 6.2
c. $K_2/2$, min DO = 5.8
d. Double K_1 & K_n, $K_2/2$, min DO = 4.7

Not good enough

Try $BOD_5 = 3$
$TKN = 1.5$

Mass balance
$BOD_5 = 4$, $BOD_4 = 8$
$NOS_4 = 5.6$

$DO_{at\ t=0.7} = 6.7$ OK

Sensitivity runs:
a. double K_1, min DO = 6.5
b. double K_n, min DO = 6.3
c. ~~double~~ $K_2/2$, min DO = 6.1
d. double K_1 & K_n, $K_2/2$, min DO = 5.1

Not as good as p 5

REGIONAL MODELING SYSTEM VERSION 3.2

MODEL SIMULATION FOR THE Gordonsville STP DISCHARGE

TO South Anna River, UT

THE SIMULATION STARTS AT THE Gordonsville STP DISCHARGE

**** PROPOSED PERMIT LIMITS ****

FLOW = .94 MGD cBOD5 = 10 Mg/L TKN = 3 Mg/L D.O. = 6.5 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.011 Mg/L ****

THE SECTION BEING MODELED IS 1 SEGMENT LONG
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

**** BACKGROUND CONDITIONS ****

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 0.00000 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 7.394 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

**** MODEL PARAMETERS ****

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. °C	DO-SAT Mg/L
1	3.70	0.565	8.108	0.900	0.200	0.000	410.00	25.00	8.216

(The K Rates shown are at 20°C ... the model corrects them for temperature.)

********** RESPONSE FOR SEGMENT 1 **********

TOTAL STREAMFLOW = 0.9400 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	6.500	25.000	0.000
0.100	0.100	6.372	24.696	0.000
0.200	0.200	6.259	24.395	0.000
0.300	0.300	6.160	24.098	0.000
0.400	0.400	6.074	23.805	0.000
0.500	0.500	6.000	23.516	0.000
0.600	0.600	5.935	23.230	0.000
0.700	0.700	5.881	22.947	0.000
0.800	0.800	5.834	22.668	0.000
0.900	0.900	5.795	22.392	0.000
1.000	1.000	5.763	22.120	0.000
1.100	1.100	5.738	21.851	0.000
1.200	1.200	5.717	21.585	0.000
1.300	1.300	5.702	21.322	0.000
1.400	1.400	5.691	21.063	0.000
1.500	1.500	5.684	20.806	0.000
1.600	1.600	5.681	20.553	0.000
1.700	1.700	5.681	20.303	0.000
1.800	1.800	5.684	20.056	0.000
1.900	1.900	5.690	19.812	0.000
2.000	2.000	5.698	19.571	0.000
2.100	2.100	5.708	19.333	0.000
2.200	2.200	5.719	19.098	0.000
2.300	2.300	5.733	18.865	0.000
2.400	2.400	5.747	18.636	0.000
2.500	2.500	5.764	18.409	0.000
2.600	2.600	5.781	18.185	0.000
2.700	2.700	5.799	17.964	0.000
2.800	2.800	5.818	17.745	0.000
2.900	2.900	5.838	17.529	0.000
3.000	3.000	5.858	17.316	0.000
3.100	3.100	5.879	17.105	0.000
3.200	3.200	5.900	16.897	0.000
3.300	3.300	5.922	16.692	0.000
3.400	3.400	5.944	16.489	0.000
3.500	3.500	5.967	16.288	0.000
3.600	3.600	5.990	16.090	0.000
3.700	3.700	6.012	15.894	0.000

****

REGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
06-24-1996 16:21:06

DATA FILE = ONESEG.MOD

****

REGIONAL MODELING SYSTEM VERSION 3.2

DATA FILE SUMMARY

****

THE NAME OF THE DATA FILE IS: ONESEG.MOD

THE STREAM NAME IS: South Anna River, UT
THE RIVER BASIN IS: York River
THE SECTION NUMBER IS: 03
THE CLASSIFICATION IS: III

STANDARDS VIOLATED (Y/N) = N
STANDARDS APPROPRIATE (Y/N) = Y

DISCHARGE WITHIN 3 MILES (Y/N) = N

THE DISCHARGE BEING MODELED IS: Gordonsville STP

PROPOSED LIMITS ARE:
FLOW = .94 MGD
BOD5 = 10 MG/L
TKN = 3 MG/L
D.O. = 6.5 MG/L

THE NUMBER OF SEGMENTS TO BE MODELED = 1

7Q10 WILL BE CALCULATED BY: DRAINAGE AREA COMPARISON
THE GAUGE NAME IS: Contrary Creek near Mineral, VA
GAUGE DRAINAGE AREA = 5.53 SQ.MI.
GAUGE 7Q10 = .0323 MGD
DRAINAGE AREA AT DISCHARGE = .9 SQ.MI.

STREAM A DRY DITCH AT DISCHARGE (Y/N) = Y
ANTIDEGRADATION APPLIES (Y/N) = N

ALLOCATION DESIGN TEMPERATURE = 25 °C

SEGMENT INFORMATION

####### SEGMENT # 1 #######

SEGMENT ENDS BECAUSE: THE MODEL ENDS

SEGMENT LENGTH = 3.7 MI

SEGMENT WIDTH = 3.5 FT
SEGMENT DEPTH = .5 FT
SEGMENT VELOCITY = .7 FT/SEC

DRAINAGE AREA AT SEGMENT START = .9 SQ.MI.
DRAINAGE AREA AT SEGMENT END = 5.17 SQ.MI.

ELEVATION AT UPSTREAM END = 435 FT
ELEVATION AT DOWNSTREAM END = 385 FT

THE CROSS SECTION IS: WIDE SHALLOW ARC
THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = N

THE BOTTOM TYPE = GRAVEL
SLUDGE DEPOSITS = NONE
AQUATIC PLANTS = NONE
ALGAE OBSERVED = NONE
WATER COLORED GREEN (Y/N) = N

****

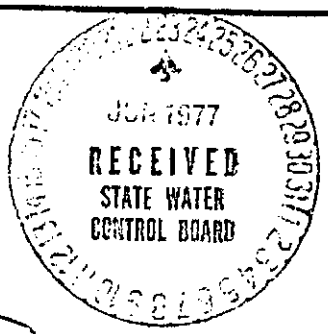
REGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
06-24-1996 16:24:05

BWCM
VA0021105

MEMORANDUM

State Water Control Board

2111 North Hamilton Street | P. O. Box 11143 | Richmond, VA. 23230



SUBJECT: Preliminary D. O. Modeling at Gordonsville STP

TO: John Godfrey

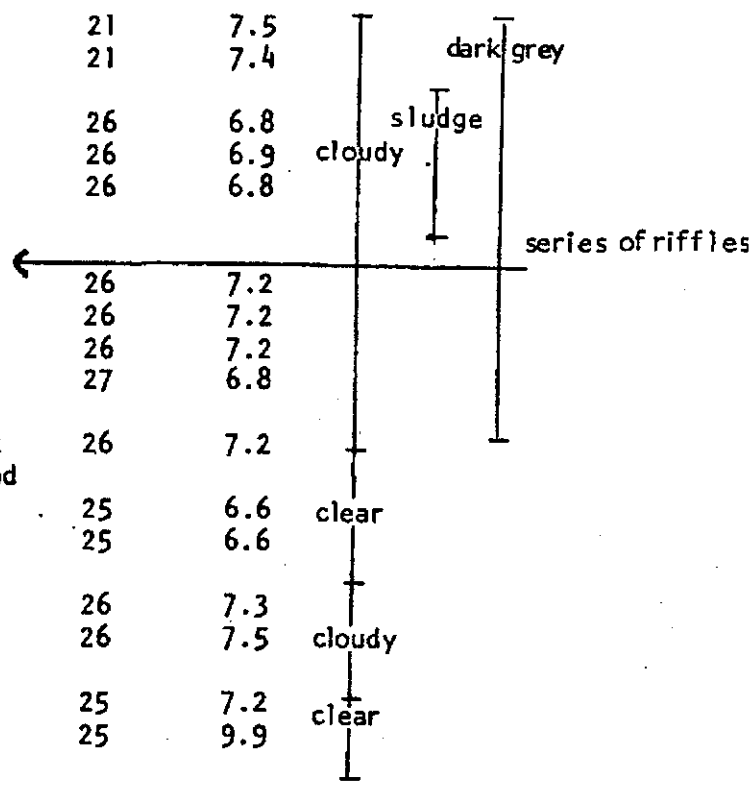
FROM: Garth Glenn

DATE: 6/22/77

COPIES: Keith Dowgewicz, Ernie Watkins, Anthony Tuxford

On 6/21/77, the Northern Regional Office conducted a D.O. study on the Gordonsville STP discharge. Following are the data collected. Also included are maps showing the locations of the stations. No flow was found above the discharge.

Station	Location	°C	D.O. ppm
#1	15 yds. above discharge	21	7.5
#2	10 yds. above discharge	21	7.4
#3	discharge	26	6.8
#4	5 ft. below discharge	26	6.9
#5	~35 yds. below discharge at corner of fence	26	6.8
#6	~50 paces below #5	26	7.2
#7	~50 paces below #6	26	7.2
#8	~50 paces below #7	26	7.2
#9	~15 yds. above confluence South Anna, Stagnant	27	6.8
#10	~800 ft. above confluence at dirt road crossing by railroad	26	7.2
#11	~25 yds. above confluence	25	6.6
#12	~25 yds. above confluence	25	6.6
#13	~200 yds. below confluence	26	7.3
#14	~60 yds. below #13 at sharp bend in stream	26	7.5
#15	Rt. 660 ~.4 miles below #14	25	7.2
#16	Rt. 603	25	9.9



/pih

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Orange County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2012 to 5:00 p.m. on XXX, 2012

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Rapidan Service Authority, P. O. Box 148, Ruckersville, VA 22968, VA0022105

NAME AND ADDRESS OF FACILITY: Gordonsville Wastewater Treatment Plant, 735 Hill Road, Gordonsville VA 22942

PROJECT DESCRIPTION: Rapidan Service Authority has applied for a reissuance of a permit for the public Gordonsville Wastewater Treatment Plant. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.667 million gallons per day with an additional design flow tier of 0.94 MGD into a water body. The sludge will be disposed in the on-site lagoon. The facility proposes to release the treated sewage in the unnamed tributary to the South Anna River in Orange County in the York River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, $cBOD_5$, BOD_5, TSS, Ammonia, TKN, Dissolved Oxygen, *E.coli*, Total Residual Chlorine, Total Phosphorus, and Total Nitrogen.

This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Joan C. Crowther
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Gordonsville Wastewater Treatment Plant
NPDES Permit Number:	VA0022105
Permit Writer Name:	Joan C. Crowther
Date:	August 17, 2012

Major [ ] **Minor** [x] **Industrial** [ ] **Municipal** [x]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?		X	
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?	X		
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?		X	
a. Has a TMDL been developed and approved by EPA for the impaired water?			X
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?			X
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?	X		
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs
(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?		X	
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?		X	
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

List of Standard Conditions – 40 CFR 122.41

Duty to comply
Duty to reapply
Need to halt or reduce activity not a defense
Duty to mitigate
Proper O & M
Permit actions
Property rights
Duty to provide information
Inspections and entry
Monitoring and records
Signatory requirement
Bypass
Upset
Reporting Requirements
Planned change
Anticipated noncompliance
Transfers
Monitoring reports
Compliance schedules
24-Hour reporting
Other non-compliance

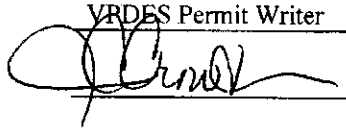
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name Joan C. Crowther

Title VRDES Permit Writer

Signature 

Date August 17, 2012